988

PANAMA CANAL COMMISSION

ANNUAL REPORT

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FISCAL YEAR ENDED SEPTEMBER 30, 1988

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PANAMA CANAL COMMISSION

Balboa, Republic of Panama
OFFICE OF THE ADMINISTRATOR

FROM THE ADMINISTRATOR

It is a pleasure to submit the annual report of the Panama Canal Commission for fiscal year 1988.

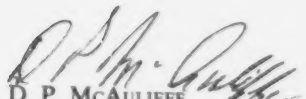
This ninth year of operation under the terms of the Panama Canal Treaty was a successful one. Oceangoing transits increased slightly, with Panama Canal net tonnage and tolls revenue each reflecting moderate growth of nearly 3 percent over the previous year. These increases were primarily due to the continued heavy movement of grains through the Canal, as well as greater transits by larger vessels. Transits by PANAMAX size vessels, the largest vessels the waterway can presently handle, comprised almost 24 percent of total oceangoing transits.

Unfortunately, the political crisis in Panama, which began in June 1987, became more intense and remained unresolved at the close of fiscal year 1988. Canal traffic, however, continued to flow normally and maintenance, modernization and improvement programs proceeded as scheduled. These programs included the Miraflores Locks overhaul, dredging and channel improvement projects, delivery of two new tractor tugs and initiation of a project providing for the major upgrading of all locks fire protection systems.

Training programs to develop and refine critical skills have also progressed smoothly, utilizing the latest techniques in the industry. Much

of the training effort is geared toward preparing Panamanian employees to manage and operate the Canal. Already, more than 84 percent of Commission personnel are Panamanian citizens, with broad responsibilities throughout the organization.

The outstanding accomplishments of the past year and the continued efficiency of the waterway are unquestionably the product of a dedicated and very capable work force, which has performed admirably despite difficulties precipitated by the political situation in Panama. I am confident that the Panama Canal will continue providing efficient and uninterrupted service to the maritime community in the years ahead.



D. P. McAULIFFE
Administrator

TABLE OF CONTENTS

PANAMA CANAL COMMISSION

	Page
ORGANIZATION CHART	vi
INTRODUCTION	
ORGANIZATION	1
THE CANAL	1
TOLL RATES	2
BOARD OF DIRECTORS	3
OFFICIALS IN THE REPUBLIC OF PANAMA	3
OFFICIALS IN WASHINGTON, D.C.	3
CHAPTER I—CANAL TRAFFIC	
TRAFFIC	5
COMPARATIVE HIGHLIGHTS OF OPERATIONS	6
COMMODITIES AND TRADE ROUTES	6
CHAPTER II—CANAL OPERATIONS	
TRANSIT OPERATIONS	13
MAINTENANCE AND CANAL IMPROVEMENT PROJECTS	15
CHAPTER III—SUPPORTING OPERATIONS	
LOGISTICAL SERVICES	18
COMMUNITY SERVICES	18
SANITATION AND GROUNDS	19
MOTOR TRANSPORTATION SERVICES	20
PUBLIC UTILITIES AND ENERGY	21
FIRE PROTECTION	21
CANAL PROTECTION	22
HEALTH AND SAFETY	22
CHAPTER IV—ADMINISTRATION AND STAFF	
PERSONNEL: FORCE EMPLOYED AND PAYROLL	25
EQUAL OPPORTUNITY PROGRAM	25
PUBLIC AFFAIRS	26
OMBUDSMAN	26
INDUSTRIAL RELATIONS	27
GENERAL COUNSEL	27
CHAPTER V—FINANCIAL REPORT	
NARRATIVE STATEMENT	31
RESULTS OF OPERATIONS	31
CAPITAL EXPENDITURES	32

CONTENTS

Financial Tables

	Page
TABLE 1.—Statement of Financial Position	34
TABLE 2.—Statement of Operations and Non-Interest-Bearing Investment	36
TABLE 3.—Statement of Changes in the Investment of the United States Government	37
TABLE 4.—Statement of Cash Flows	38
TABLE 5.—Statement of Status of Appropriations	40
TABLE 6.—Statement of Property, Plant and Equipment	42
Notes to Financial Statements	43

CHAPTER VI—STATISTICAL TABLES

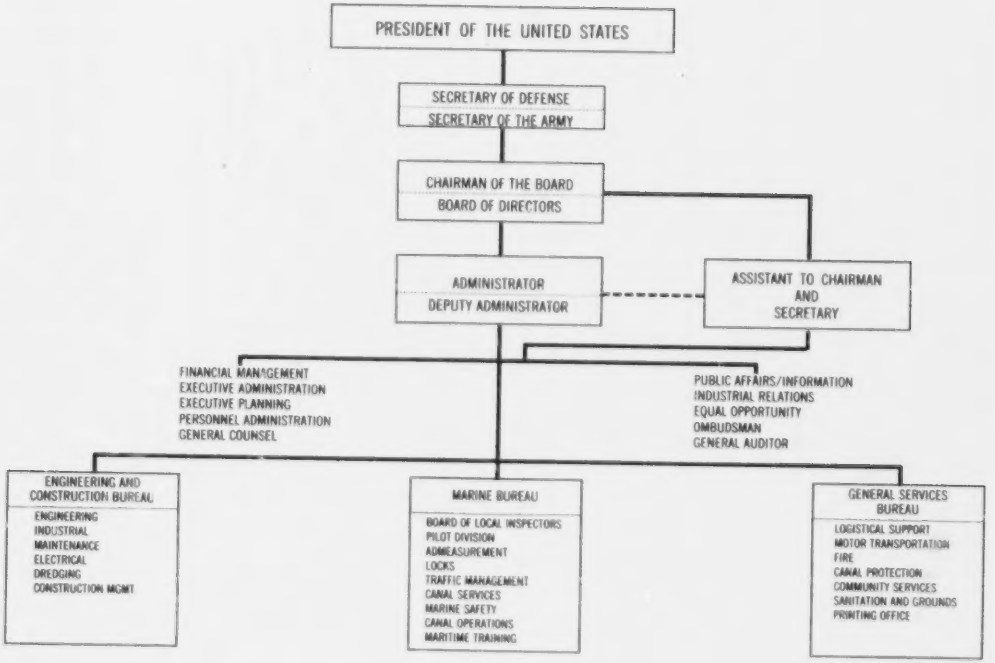
Shipping Statistics

TABLE 1.—Panama Canal Traffic—Fiscal Years 1979 through 1988	50
TABLE 2.—Oceangoing Commercial Traffic by Months—Fiscal Years 1988 and 1987	52
TABLE 3.—Canal Traffic by Flag of Vessel—Fiscal Year 1988	53
TABLE 4.—Classification of Canal Traffic by Type of Vessel—Fiscal Year 1988	56
TABLE 5.—Laden and Ballast Traffic by Flag of Vessel—Fiscal Year 1988	58
TABLE 6.—Segregation of Transits by Registered Gross Tonnage—Fiscal Year 1988	60
TABLE 7.—Principal Commodities Shipped Through Canal by Fiscal Years	62
TABLE 8.—Origin and Destination of Commercial Cargo Through the Panama Canal from Atlantic to Pacific During Fiscal Year 1988 Segregated by Countries in Principal Trade Routes	66
TABLE 9.—Origin and Destination of Commercial Cargo Through the Panama Canal from Pacific to Atlantic During Fiscal Year 1988 Segregated by Countries in Principal Trade Routes	72
TABLE 10.—Important Commodity Shipments Over Principal Trade Routes—Atlantic to Pacific	80
TABLE 11.—Important Commodity Shipments Over Principal Trade Routes—Pacific to Atlantic	101
TABLE 12.—Principal Canal Commodities by Direction—Fiscal Year 1988	123

Other Statistics

TABLE 13.—Water Supply and Usage	125
TABLE 14.—Dredging Operations	125
TABLE 15.—Electrical Power Generated	126
TABLE 16.—Fire Division Statistics	126

PANAMA CANAL COMMISSION



INTRODUCTION

ORGANIZATION

The Panama Canal Commission is an agency of the Executive Branch of the United States Government, provided for by the Panama Canal Treaty of 1977, and established by the Panama Canal Act of 1979 (93 Stat. 452; 22 U.S.C. 3601 et seq), enacted September 27, 1979. The authority of the President of the United States with respect to the Commission is exercised through the Secretary of Defense and the Secretary of the Army. The Commission is supervised by a nine-member Board. Five members are nationals of the United States appointed by the President with the advice and consent of the Senate. Four members are nationals of the Republic of Panama who are proposed by the Republic of Panama for appointment by the President.

The Commission was established to carry out the responsibilities of the United States with respect to the Panama Canal under the Panama Canal Treaty of 1977. In fulfilling these obligations, the Commission manages, operates, and maintains the Canal, its complementary works, installations, and equipment, and provides for the orderly transit of vessels through the Canal. The Commission will perform these functions until the treaty terminates on December 31, 1999, when the Republic of Panama will assume full responsibility for the Canal.

The operation of the waterway is conducted on a self-financing basis. The Commission is expected to recover through tolls and other revenues all costs of operating and maintaining the Canal, including interest, depreciation, capital for plant replacement, expansion and improvements, and payments to the Republic of Panama for public services and annuities, in accordance with paragraph 5 of Article III and paragraphs 4(a) and (b) of Article XIII, respectively, of the Panama Canal Treaty of 1977. Revenues from tolls and all other sources are deposited in the U.S. Treasury in an account known as the Panama Canal Revolving Fund. The resources in this fund are available for continuous use and serve to finance Canal operating and capital programs which are reviewed annually by the Congress.

THE CANAL

The Panama Canal is a lock-type canal approximately 51 miles long from deep water to deep water. The minimum width of the navigable channel is 500 feet. Navigable channel depth can vary according to the amount of water

avaiiable in Canal storage areas; however, the normal permissible transit draft is 39 feet 6 inches tropical fresh water.

Vessels transiting the Canal are raised in three steps to the level of Gatun Lake, the principal source of Canal water, then lowered to sea level again in three steps. The three sets of Canal locks are paired so as to permit simultaneous lockage of two vessels in the same or opposite direction.

Since August 15, 1914, the official date of its opening, the Panama Canal has served world trade virtually without interruption. Through this fiscal year, a total of 690,962 vessels of all types have transited with 582,473 or 84.3 percent of the total being of the oceangoing commercial class.

TOLL RATES

Toll rates are: (a) on merchant vessels, Army and Navy transports, hospital ships, supply ships, and yachts, when carrying passengers or cargo, $1.83 per net vessel ton of 100 cubic feet of actual earning capacity, as determined in accordance with the "Rules of Measurement of Vessels for the Panama Canal;" (b) on such vessels in ballast, without passengers or cargo, $1.46 per net vessel ton; and (c) on other floating craft, $1.02 per ton of displacement.

By treaty, the United States continues to provide to Colombia free transit through the Canal of its troops, materials of war, and ships of war.

BOARD OF DIRECTORS
Ending Fiscal Year 1988

Honorable WILLIAM R. GIANELLI
Chairman, Board of Directors
Panama Canal Commission
Washington, D.C.

Honorable LUIS A. ANDERSON
Panama, Republic of Panama

Honorable ANDREW E. GIBSON
Short Hills, New Jersey

Honorable RICHARD N. HOLWILL
American Ambassador to Ecuador
Quito, Ecuador

Honorable OYDEN ORTEGA
Panama, Republic of Panama

Honorable CARLOS OZORES
Panama, Republic of Panama

Honorable WALTER V. SHEA
Annapolis, Maryland

Honorable CARLOS VELARDE
Panama, Republic of Panama

Honorable WILLIAM W. WATKIN, Jr.
Beaufort, South Carolina

Executive Committee

Honorable WILLIAM R. GIANELLI
Chairman
Honorable OYDEN ORTEGA
Honorable WALTER V. SHEA
Honorable CARLOS VELARDE
Honorable WILLIAM W. WATKIN, Jr.

OFFICIALS IN THE REPUBLIC OF PANAMA

Administrator ..... Honorable D. P. MCAULIFFE
Deputy Administrator ..... Honorable FERNANDO MANFREDO, Jr.

OFFICIAL IN WASHINGTON, D.C.

Assistant to the Chairman and Secretary ..... MICHAEL RHODE, Jr.

The MARCHEN MAERSK (left) passes through the Panama Canal on its maiden voyage. The 60,640 deadweight ton vessel measures 965 feet in overall length, the longest containership ever to transit the waterway. Its length can be appreciated by comparing the position of the bow and stern towing locomotives against those assisting the large automobile carrier on the right.

Chapter I

CANAL TRAFFIC

TRAFFIC

Canal traffic and tolls revenue continued to grow moderately in fiscal year 1988. The increase was primarily fueled by a sharp improvement in a number of commodities, particularly grain, refrigerated products, lumber and products, and containerized cargo. These gains offset declines in key trades such as automobiles and petroleum and petroleum products.

Oceangoing transits in fiscal year 1988 remained at virtually the same levels of fiscal year 1987, increasing by five transits from 12,313 to 12,318 or 33.7 daily. Commercial vessels accounted for 12,234 of total oceangoing transits, changing very little from 12,230 in fiscal year 1987. Vessels owned or operated by the U.S. Government and free Colombian and Panamanian Government accounted for 84 transits, compared with 83 in the prior year.

Average vessel size resumed growth in fiscal year 1988 after the slight contraction experienced in fiscal year 1987. Transits by vessels having beams of 100 feet and over increased to 2,894 from 2,668 transits in 1987, accounting for 23.5 percent of total oceangoing transits compared with 21.7 percent in the prior year. Vessels having beams of 80 feet and over totaled 6,027 transits or 48.9 percent of total oceangoing transits versus 5,908 or 48.0 percent in 1987. The average Panama Canal net tonnage of oceangoing commercial vessels reached a record level of 15,658 tons, an increase of 2.7 percent from the 15,248 tons of the prior year.

A two-year summary of the key elements of Canal traffic and tolls revenue is shown in the following table:

COMPARATIVE HIGHLIGHTS OF OPERATIONS

	Fiscal year 1988	1987
Oceangoing transits:		
Commercial	12,234	12,230
U.S. Government	69	78
Free	15	5
Total	12,318	12,313
Daily average	33.7	33.7
Small transits:		
Commercial	844	852
U.S. Government	246	236
Free	33	43
Total	1,123	1,131
Total cargo:		
Commercial	156,484,063	148,693,662
U.S. Government	296,140	205,701
Free	.....	62
Total	156,780,203	148,899,425
Total Panama Canal net tons and reconstructed displacement tonnage	192,421,295	187,349,205
Transit revenue:		
Commercial tolls	$337,946,016	$328,463,544
U.S. Government tolls	1,373,309	1,395,231
Tolls revenue	$339,319,325	$329,858,775
Harbor pilotage, tug, launch, and other services	$70,421,731	$68,128,024
Total transit revenue	$409,741,056	$397,986,799

COMMODITIES AND TRADE ROUTES

Cargo moved by transiting ships continued upward in fiscal year 1988. Total commercial cargo rose 5.2 percent to 156.5 million long tons from 148.7 million tons in fiscal year 1987, reflecting gains in bulk cargoes, such as grains, coal, and lumber.

For the second consecutive year, grain shipments reflected an improvement. Grain tonnage rose 10.8 percent to 35.9 million tons from the 32.4 million tons registered in fiscal year 1987, primarily as a result of a doubling of wheat shipments and further improvement in the corn movement. Corn, which accounts for the largest tonnage in the grain commodity group, totaled 16.2 million tons, rising 1.8 percent over the 15.9 million tons shipped through the Canal in 1987. About 92.4 percent, or 14.9 million tons, was U.S. corn shipped to the Far East, out of which Japan received 11.3 million tons, South Korea 1.8 million tons, and Taiwan 1.7

million tons. Wheat increased 108.8 percent from 4.5 million tons in 1987 to 9.4 million tons in 1988. Almost 53.7 percent or 5.1 million tons of the wheat consisted of shipments destined for China compared with 1.0 million tons in 1987. The increase in corn and wheat offset declines in other components of the commodity group; notably, soybeans, which was down from 7.8 million long tons in 1987 to 6.9 million tons; and sorghum, which decreased from 2.6 million tons to 2.2 million tons.

Petroleum and petroleum products continued downward in 1988, falling 5.2 percent to 24.6 million long tons, the lowest level since 1977. Crude oil dropped 1.9 percent to 8.8 million tons from the already depressed 9.0 million tons last year, despite a recovery in Ecuadorian shipments, which increased to 5.0 million long tons from 3.5 million tons in 1987. The petroleum products segment of this commodity group declined 6.9 percent to 15.8 million long tons from 17.0 million tons, with the highest reduction concentrated in residual oil shipments.

The nitrate, phosphates and potash group, the third major commodity group in Canal trade, rose 0.8 percent to 12.1 million long tons from 12.0 million tons in 1987. Phosphates, which accounted for 57.3 percent of the group, increased 6.9 percent to 7.0 million long tons from 6.5 million tons in the prior year. Nearly 80 percent of the phosphate shipped through the Canal originated in the U.S. East Coast and was primarily destined for the Far East. China accounted for about 1.7 million long tons and South Korea and Japan for 1.3 million long tons each.

Coal and coke tonnage increased to 8.6 million long tons from 7.9 million tons last year, due to an upturn in coke shipments. Coke rose from 400 thousand tons in 1987 to 1.8 million tons, reflecting sharply higher flows emanating from Japan and Australia, mainly destined for the U.S. East Coast. The coal segment of this commodity group, on the other hand, decreased to 6.8 million long tons from 7.2 million in the prior year. Over 73 percent of the coal shipped through the Canal constituted U.S. coal exports primarily destined for Japan and Taiwan.

Automobile shipments, included in the machinery and equipment commodity group, decreased to 2.2 million long tons from 2.5 million tons in 1987. The drop reflects declines in U.S. imports of Japanese cars due to Japanese automobile production in the U.S. and the high value of the yen relative to the U.S. dollar. Automobiles from Japan destined for the U.S. East Coast, totaled 1.5 million tons versus 1.8 million tons in 1987.

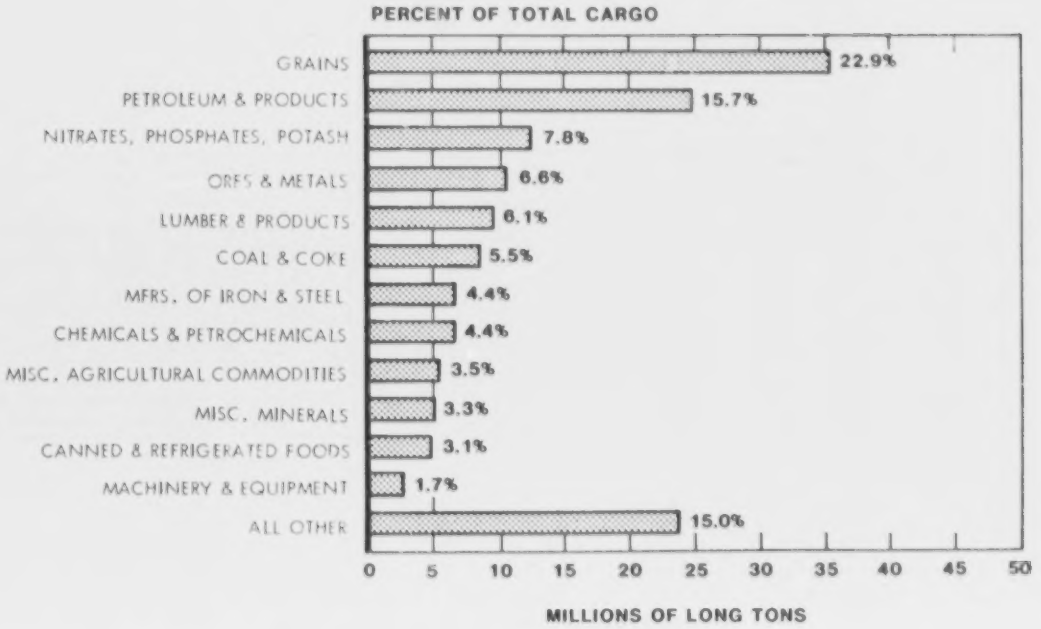
Most other commodity groups, excluding manufactures of iron and steel, improved this fiscal year. Significant increases were achieved in a number of trades, such as chemicals and petroleum chemicals, refrigerated foods, lumber and products, and ores and metals.

Trade between the East Coast United States and Asia continued to dominate Canal traffic, with 40.5 percent of total Canal commercial cargo

moved on this route. Cargo movements in this trade rose 9.2 percent to 63.4 million long tons in 1988 from 58.1 million long tons in the prior year.

The following tables show the principal commodity groups moving in oceangoing commercial vessels in 1988 and a comparison of the major trade routes in 1988 and 1987.

PRINCIPAL COMMODITY GROUPS
TRANSITING THE CANAL
OCEANGOING COMMERCIAL CARGO FY 1988



Major Voyage Trade Routes in Canal Traffic

Trade Route	Fiscal year 1988		Fiscal year 1987		Percent of Increase or (Decrease)	
	Panama Canal Net Tons	Long Tons Cargo	Panama Canal Net Tons	Long Tons Cargo	Panama Canal Net Tons	Long Tons Cargo
	[In thousands of tons]					
East Coast United States-Asia	76,687	63,442	77,476	58,111	(1.0)	9.2
East Coast United States-West Coast South America	16,370	12,335	16,780	12,005	(2.4)	2.7
Europe-West Coast United States/Canada	12,731	14,956	14,231	14,850	(10.5)	0.7
Europe-West Coast South America	10,599	7,287	10,601	7,375	(0.0)	(1.2)
Round the World	10,597	5,515	5,929	3,743	78.7	47.3
U.S. Intercoastal (including Alaska and Hawaii)	5,101	2,320	4,020	2,879	26.9	(19.4)
Europe-Asia	4,684	2,867	4,496	3,700	4.2	(22.5)
East Coast United States/Canada-Oceania	4,680	5,499	3,983	4,780	17.5	15.0
West Indies-West Coast South America	4,652	4,131	2,834	2,730	64.1	51.3
West Indies-Asia	3,959	3,079	3,141	1,842	26.0	67.2
East Coast United States-West Coast Central America	3,847	3,186	3,288	2,961	17.0	7.6
Central American Intercoastal	3,284	2,810	3,985	3,313	(17.6)	(15.2)
Subtotal	157,191	127,427	150,764	118,289	4.3	7.7
All other routes	34,315	29,056	35,651	30,401	(3.7)	(4.4)
Total	191,506	156,415	186,407	148,690	2.7	5.2

The Commission's new high speed launch BALLENA (foreground) is designed to rush personnel between work stations along the Canal. Procurement of similar as well as larger high speed launches is contemplated in the coming fiscal years. The GUIA, one of two new tugs received this year, can also be seen on the left providing stern assist to a PANAMAX-size vessel in transit.

Chapter II

CANAL OPERATIONS

Canal operations are comprised of Transit Operations and Maintenance and Related Canal Projects. The various functions are divided among a number of operating bureaus within the Canal agency.

TRANSIT OPERATIONS

Daily average transits by oceangoing vessels remained at 33.7 per day during fiscal year 1988. Average time in Canal waters decreased from 24.0 hours in fiscal year 1987 to 21.9 hours in fiscal year 1988.

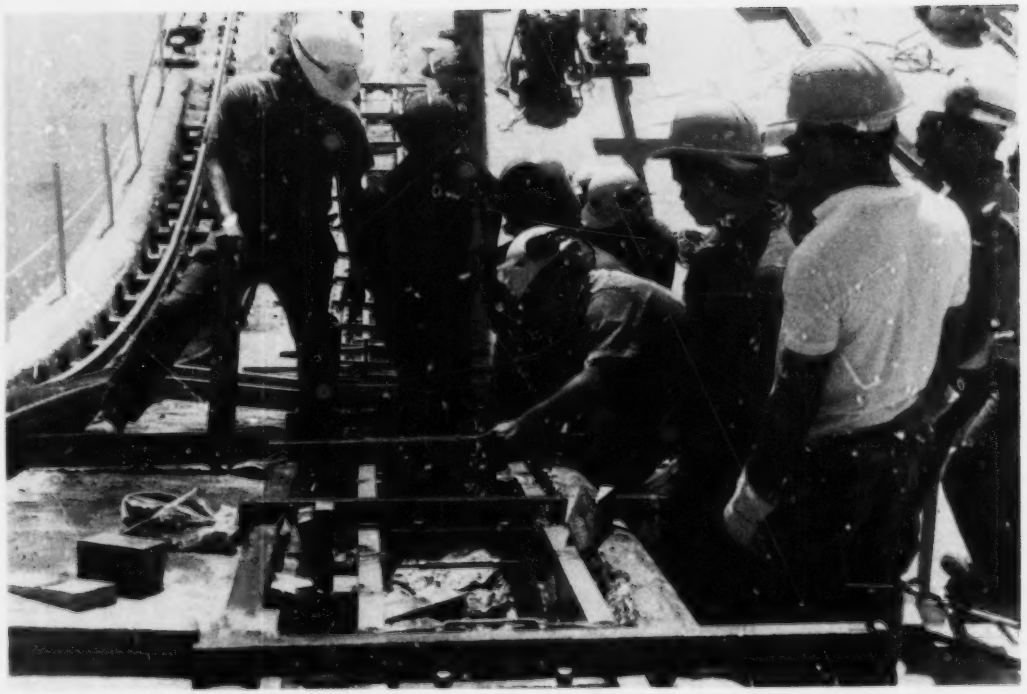
Fiscal year	*Vessels of 600-foot length and over*	*Percent of total oceangoing transits*	*Vessels of 80-foot beam and over*	*Percent of total oceangoing transits*
1988	4,047	32.9	6,027	48.9
1987	4,005	32.5	5,902	48.0
1986	4,131	34.4	5,898	49.1
1985	3,862	33.1	5,514	47.3
1984	3,865	33.9	5,496	48.3
1983	4,157	35.1	5,869	49.5
1982	5,534	39.1	7,226	51.1
1981	4,855	34.7	6,364	45.5
1980	4,598	33.8	6,089	44.7

The number of vessels transiting at more than 36-foot draft increased 3.6 percent: 1,766 vessels during FY 1988 compared to 1,704 during fiscal year 1987. The maximum allowable draft remained at 39 feet 6 inches during the entire fiscal year.

Effective April 15, 1988, transit regulations were revised to allow commercial vessels whose maximum length overall, including bulbous bow, does not exceed 950 feet and passenger and containerships whose maximum length overall does not exceed 965 feet. Vessels greater than 900 feet overall length making their first transit, are newly modified or constructed, will still be subject to denial of passage and to the requirement of prior review and approval of vessel plans.

Total jobs performed by Commission tugs decreased from 39,492 in fiscal year 1987 to 38,736 in fiscal year 1988.

	Fiscal year	
	1988	*1987*
Oceangoing transits	12,318	12,313
Tug jobs:		
Balboa	26,854	27,893
Cristobal	11,882	11,599
Tug operating hours	60,289	58,380



Workers pause as an engineer checks the alignment of the rail during rehabilitation of the locks locomotive tow track. Approximately $100 million of the Canal's annual operating budget is dedicated to maintaining and improving the waterway.

MAINTENANCE AND CANAL IMPROVEMENT PROJECTS

Maintenance and improvements to the Canal progressed smoothly throughout the year. The various divisions and units of the Engineering and Construction Bureau are generally responsible for the overall physical maintenance and improvement of the waterway. The Marine Bureau operates and maintains the locks and related facilities. The occasional use of alternative procurement sources in support of these programs became necessary because of procurement inconveniences resulting from the political crisis in Panama.

Routine maintenance dredging, as well as channel improvements to both entrances to the waterway, proceeded as scheduled. The Gatun approach was completed in May 1988 and the Miraflores approach will be completed in May 1989. Statistics on the volume of material dredged appear in Table 14 of this report.

As part of a long range program established for the periodic rehabilitation of underwater equipment, miter gates 104 through 107 and two spare gates at Miraflores Locks were overhauled in conjunction with other chamber work. Other significant locks maintenance projects included the replacement of old transformers at Gatun Locks with new, more efficient cast coil transformers; scheduled maintenance of lock towing locomotives; locomotive tow track work at all locks; and replacement of damaged or worn fendering.

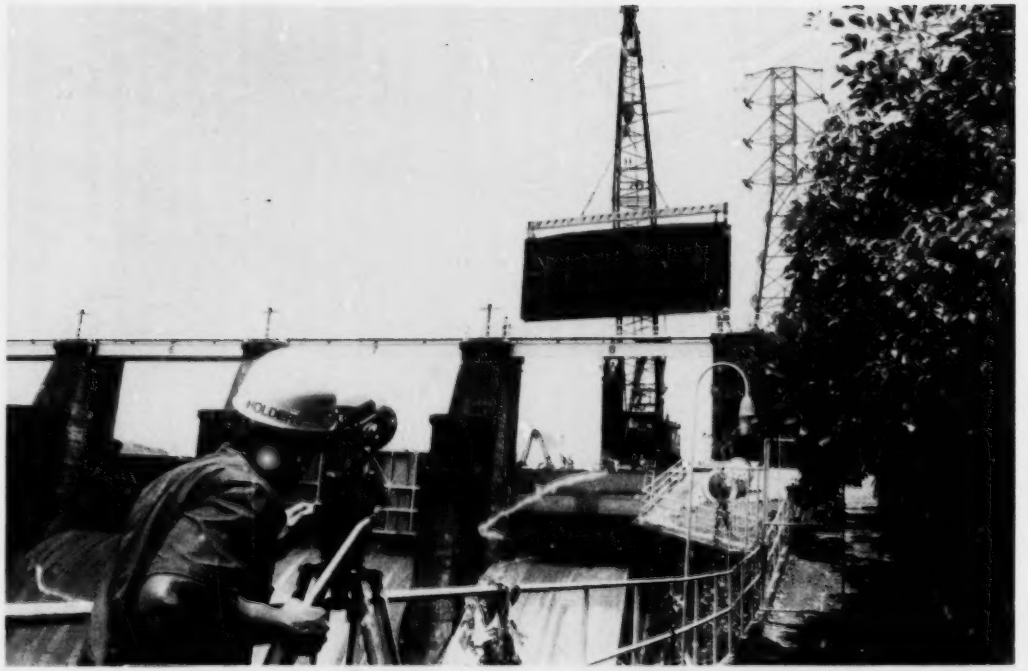
The first major overhaul of Miraflores Spillway was completed. This included the purchase and installation of two new flood gates and the installation of three spare and one rehabilitated gate.

Significant marine-related maintenance work included major overhauls of two barges, the crane barge *Goliath*, the tugs *Schley* and *Amistad*, and Madden Dam Drum Gate No. 4. Partial overhaul of the tug *Alianza* and an interim overhaul of the tug *Progreso* were completed. The tug *Morrow* and the craneboat *Atlas* were undergoing overhaul at year end.

Major equipment acquisitions in support of Canal operations consisted of the delivery of two new powerful tractor tugs; two diesel electric locomotive cranes, both complying with OSHA regulations for lifting personnel; one high speed launch for rapid movement of personnel across Gatun Lake; a fully equipped salvage barge; four overhead bridge cranes for shops at the Industrial Division; a new building for the assembly and storage of docking blocks and cradles for the Syncrolift; and rental (with option to purchase) of a large portable shelter to protect exposed work sites in the Mt. Hope industrial area.

Contracts were awarded for the replacement of the Gatun and Miraflores Locks north locomotive turntables; major upgrading of all locks fire protection systems; replacement of 44kv line track span electrical towers; remedial excavation at East Culebra Reach; and, one tractor tug, two pilot/linehandler launches and two high speed launches.

The first phase of a multiyear program to replace Commission telephone exchanges was completed in January 1988.



The floating crane GOLIATH removes a flood gate during the first major overhaul of Miraflores Spillway. A Commission photographer captures the event on film to document the procedure and prepare instructional films to aid in future maintenance training programs.

Chapter III

SUPPORTING OPERATIONS

Supporting operations of the Panama Canal Commission provided essential support services to the operation and maintenance of the waterway and the Agency's facilities, as well as to other U.S. agencies on the Isthmus and to employees and their dependents. These operations included logistical services, community services, sanitation and grounds management, transportation services, public utilities, fire protection, Canal security protection, health and safety and other employee services.

Due to the political crisis in Panama, it became necessary to implement a number of emergency and contingency support operations not otherwise necessary in normal times. A contingency information network for quick dissemination of vital information within the Commission was established. An interservice support agreement with the U.S. Forces to purchase gasoline and marine diesel fuels was activated on occasion. A logistical agreement was reached in concept with U.S. Southern Command for the purchase of critical foodstuff and health items if needed. In addition, a plan was developed to procure and stock in Commission inventory a limited number of emergency jobsite rations for use by employees in emergency situations. Staples suitable for an average size family were procured from various sources, including U.S. suppliers and made available to Commission employees on a payroll deduction basis during the crisis, while supermarkets in the city were either closed or had depleted their inventories. A shuttle bus service was implemented on several occasions, using pickup points at strategic locations in the terminal cities of the Isthmus to enable employees to reach their worksites during the local bus strike, street closures and disturbances. Many essential parts and equipment necessary for maintenance and repair of the Canal were procured from U.S. sources, since Panamanian suppliers were having serious difficulty meeting deadlines and obtaining funding due to the political crisis. The Commission also activated an emergency plan to house certain employees during the crisis by providing sleeping accommodations to employees who could not reach their homes at certain times due to the disturbances in the cities. Finally, as an emergency alternative, water transportation was used frequently during the year to

transport pilots and Commission officials across the Isthmus when major highways were blocked by demonstrations or other dangerous conditions made the streets too hazardous to use.

LOGISTICAL SERVICES

The Logistical Support Division provided centralized procurement, inventory management, warehousing, distribution, contract administration, and supply and property disposal support to Canal operations. A total of $70 million in goods and services were procured during fiscal year 1988, including $20.6 million from sources in Panama. Major contracting obligations included $3.1 million for Bunker "C" fuel oil for thermoelectric power generation, $4.6 million for light diesel fuel, $4.0 million for a tractor tugboat, $1.1 million for cast coil transformers, $838,000 for pilot/linehandler launches, $1.5 million for vehicles, and $727,000 for protective relays.

Approximately $21 million in Commission inventory items were issued for Commission use, and $20.3 million was obligated for new inventory purchases during the year. A total inventory of 39,157 line items with an average cost value of $29.7 million was on hand at year end.

Activities of the Excess Disposal Unit included no-cost transfers to other U.S. Government agencies of excess equipment having an original acquisition value of approximately $1.26 million, while surplus property sold to the Government of Panama at current fair market value amounted to approximately $40,024. Additional surplus property was sold publically for the best available prices.

The New Orleans Branch in Louisiana expedited urgent purchases and coordinated all Commission cargo shipments from the United States to Panama. In addition, the branch performed a major role in providing emergency food and other procurements for the Commission during the political crisis in Panama. Under the coverage of the Military Sealift Command's contract, 16,071 measurement tons of containerized and breakbulk cargo for the Commission were shipped to Las Minas, Panama. An additional 6,890 measurement tons of general cargo and vehicles were shipped under commercial contract with an ocean freight shipper from New Orleans to the Republic of Panama.

COMMUNITY SERVICES

The Community Services Division is responsible for managing employee housing, Commission-owned buildings, a technical resources center (library) and the employee fitness program for the agency. Other services are provided by the Office of Area Coordination.

The Housing Management Branch managed housing operations, including routine maintenance and repairs to the Commission housing inventory, through Commission and contract forces; assigned safety and energy conservation a high priority; provided for the physical and personal security of the residents through a number of strengthened physical security programs; upgraded kitchen and bathroom facilities; concentrated its limited funding expenditures on housing units identified to continue under the Commission's management; released to the Government of Panama 27

housing units excess to the needs of the Commission; obtained concurrence from the Government of Panama to demolish one housing unit in Margarita. A total of 1545 housing units, representing 36% of the inventory of approximately 4300 units owned by the Panama Canal Company immediately prior to entry into force of the Panama Canal Treaty in 1979 were retained by the Commission at the end of FY 1978. Unknown squatters illegally forced their entry the night of March 14, 1988 into a number of Commission-managed houses in Margarita. Requests to the appropriate authorities of Panama for assistance in removing them brought no positive response. Intruders continued to illegally occupy twelve of these housing units at fiscal year-end.

The Buildings Management Branch managed and maintained buildings and structures under the division's administration; performed major renovation of six office buildings, coordinated design and minor improvements to a number of offices, accomplished routine maintenance and repairs; modified existing facilities to comply with standards for handicapped personnel; accomplished work through Commission and contract forces; provided custodial services to all Community Services buildings and to a limited number of units managed by other divisions; placed a high priority on safety requirements and corrections, energy conservation and physical security programs; managed Executive Order 12411 and related regulations as the agency space manager; released space formerly occupied by the Technical Resources Center at Building 0610, Ancon, to the Government of Panama.

The Technical Resources Center supported all Commission units and programs with technical information, research and publications. It also assisted other U.S. agencies and entities in Panama; provided professional development to the pilot understudies, apprentice and clerical trainee programs through workshops; maintained the specialized Panama Canal Collection of library and three-dimensional materials; and installed computer hardware and specialized software to enhance its research capability.

The Employee Fitness Branch managed and developed year-round and summer fitness programs and related recreational activities for all Commission employees and their dependents; operated recreational areas and facilities; trained other Commission units in rescue, water safety; advanced lifesaving, drown-proofing, survival floating and water safety subjects; and certified swimming proficiency of job applicants and employees.

SANITATION AND GROUNDS

The Sanitation Branch continued to carry out vector control and environmental sanitation measures essential to maintain the high standard of public health enjoyed by Panama Canal Commission employees and their families. Surveillance and control of insect vectors and vermin were continued, with emphasis on nonchemical methods; i.e., mosquito control through the maintenance of drainage ditches and other source reduction measures. A network of over 220 miles of drainage ditches was maintained to

eliminate mosquito breeding within a one mile perimeter around employee worksites and housing areas. Specialized mosquito control measures continue to be necessary for the prevention of such major insect-borne tropical diseases as malaria, dengue and yellow fever. Because *Aedes aegypti*, the vector of dengue and yellow fever, has now spread throughout Panama City, control measures directed against this species are of even greater importance than in past years. In addition, day-to-day control efforts continue to be directed against cockroaches, ticks and fleas, house flies, bats, rodents, venomous snakes and other public health pests.

The Grounds Branch maintained approximately 2900 acres of improved grounds and turf within residential areas, and around Commission buildings, the locks and other industrial facilities. Field crews also maintained vegetation control along utility line rights-of-way, earthen saddle dams, Gatun Dam, Canal bank stability drainage systems, and around the perimeters of aids-to-navigation towers and targets. Monitoring of garbage and refuse collection became another significant activity in the latter part of FY 1988, when the Government of Panama reduced garbage/refuse collection service from every other day to once a week. As the fiscal year ended, contingency plans were being developed to handle garbage and refuse collection should such measures become necessary.

Following a major landslide on the south side of Gold Hill which occurred on October 10, 1986, experimental plantings of tree seedlings of *Gmelina arborea* and *Acacia magnium* trees were made in advance of letting a contract to revegetate areas cleared during the massive earth-moving activity directed at lessening the overburden above the slide areas. The pilot project proved to be a success, and a contract was awarded for the planting of 59,000 tree seedlings of the above species on several cleared areas on both the east and west banks of the Canal. The planting phase of the contract was completed on September 30, 1988, and the establishment phase (maintenance of planted trees in the field) will continue until December 31, 1988.

The Entomology Unit continued to provide daily expert technical advice and insect vector surveillance within the Commission. The Unit's laboratory staff alerted authorities of the recent invasion by the *Aedes aegypti* mosquito in Balboa on July 29, 1988, leading to a timely response and the successful elimination of the breeding focus at that time. The unit also has closely monitored Africanized bee swarms and nests since the arrival of the bees at the Panama Canal in March 1982. For the past three years, Africanized bee populations have been at levels about half that seen in the peak years of 1983-1984.

MOTOR TRANSPORTATION SERVICES

The Motor Transportation Division operated and maintained a consolidated motor pool of 892 vehicles designed to meet the vehicular transportation requirements of the Commission. The vehicle fleet in fiscal year 1988 included 642 trucks of various types, 208 passenger-carrying vehicles, and 42 special-purpose vehicles. Vehicle mileage increased slightly from 7,112,193 miles in FY 1987 to 7,317,387 miles in FY 1988. Fully

equipped shops, including a tire retreading facility and heavy duty repair shops, provided facilities for overhauls, maintenance and repairs to the Motor Transportation Division fleet and equipment of other Commission units. In addition, some services were contracted out where they were available in required quantity and quality in Panama. The vehicle inspection facilities located within the Motor Transportation Division also were used in late calendar year 1987 and early 1988 by U.S. Army personnel, under agreement with the Government of Panama, to conduct inspections of privately-owned vehicles, and by the Motor Transportation Division to perform Commission vehicle inspections.

PUBLIC UTILITIES AND ENERGY

Panama Canal Commission facilities include electric power generation and distribution systems, communication systems, water purification and distribution systems, and a central chilled water air conditioning system for certain public buildings.

Total Canal area energy demand during FY 88 was 525 gigawatt hours, a 5.6 percent increase from the 497 gigawatts used last year. The peak hourly demand of 84 megawatts reached on December 18, 1987, equalled that of the previous year. Agency-directed energy consumption in fiscal year 1988 for electrical power and fuel, calculated together in Btu's, was reduced 0.9 percent in comparison to 1987; electrical power consumption by the Commission, 79.9 gigawatt hours, was 4.7 percent above usage levels for comparable operations during the previous year; while total fuel consumption (excluding fuel for power generation), 4.6 million gallons, was 8.3 percent lower.

The water treatment and distribution systems operated by the Commission provide potable water for the Canal area and areas of the Republic of Panama. The Pacific side system serves the Canal area, portions of Panama City, and suburban areas; and the separate Atlantic side system serves the Canal area, portions of Colon, and suburban areas. During fiscal year 1988, the two systems supplied 3.36 billion cubic feet of potable water to consumers, an increase of about 8.04 percent from the previous year. Water supplied by the Panama Canal Commission to Panama City and Colon metropolitan areas amounted to approximately 56.8 million gallons per day.

FIRE PROTECTION

The Panama Canal Commission Fire Division and the Bomberos, Republic of Panama, in accordance with the Panama Canal Treaty of 1977, are responsible for providing fire protection, firefighting and rescue operations in Canal operating areas, defense sites, civilian and military areas of coordination and shipboard firefighting on all vessels in Canal area waters. This includes joint responses to structural fires, ship fires and other emergencies in areas of joint responsibility.

Total responses for fiscal year 1988 were 6497 compared to 5748 for fiscal year 1987. At least 35 percent of the responses for this year were attributable to the marine standby program, a transit safety measure. This service is provided by Fire Division personnel with foam apparatus on standby at the

locks for certain vessels indicated by the Marine Bureau as containing dangerous cargoes. The critical period is considered to be when a vessel is entering the locks.

Requests for ambulance service totaled 1745, representing an 18 percent increase over the previous year. Bomb threats also increased from 31 last year to 42 this year. Excluding ship fires, there were 649 fires this year, 26 percent more than FY 1987. As in the past, the majority of these incidents were grass and brush fires, most frequently occurring during the vulnerable dry season period. Additional Fire Division statistics appear in Table 16 of this report.

CANAL PROTECTION

The Canal Protection Division provides operational security for the Panama Canal Commission and plant protection of installations and facilities devoted to the management, operation, and maintenance of the waterway.

Security improvements to vital installations and support facilities continued throughout the year with site surveys, inspections and installation of essential security hardware and systems. Political disturbances required reassignment of guard personnel to many Commission support activity areas along with expanded coverage at vital installations which resulted in a significant increase in work load and area of responsibility. At year end, 285 uniformed guards and extensive physical security systems provided security to most installations of the Canal, many on a 24-hour per day basis.

HEALTH AND SAFETY

The Occupational Health Division and the Safety Division are components of the Office of Personnel Administration. The Personnel Director is the Designated Agency Safety and Health Official. The Panama Canal Commission is committed to ensuring a safe and healthful workplace for its employees, an objective which enjoys support from top management down.

During fiscal year 1988, the Commission experienced 497 performance-of-duty accidents/illnesses for which employees required medical attention beyond first aid, as compared to 628 such accidents/illnesses in fiscal year 1987. The incident rate fell significantly from 7.9 per 100 employees in fiscal year 1987 to 5.8 in fiscal year 1988. There were no fatalities recorded in either fiscal year 1988 or fiscal year 1987.

To further enhance safety and health in the Commission workplace during fiscal year 1988, on and off-Isthmus training was provided, workplace inspections and evaluations were continued, ongoing publicity was accomplished, and the newly revised safety service awards program was implemented to recognize accident-free service and foster positive safety attitudes. A Dive Safety Board developed measures to improve safety and technical standards and procedures in dive operations. Executive Order 12564 was implemented with the addition of certain measures to an existing program of controlled alcohol and drug testing. A Smoking Policy was also implemented, various industrial hygiene policies and procedures were

finalized, coordination of a hazard communication policy continued, and a revised Safety Shoe Policy was effected. As a preparatory measure, a training program was developed for health and emergency response personnel relating to the human immunodeficiency virus (HIV). Additionally, the certified Safety and Health Committee continued its active role in the safety and health program.

Chapter IV

ADMINISTRATION AND STAFF

PERSONNEL
FORCE EMPLOYED AND PAYROLL

At the end of fiscal year 1988, the total Isthmian force of the Commission was 8,522 compared to 8,562 employees in fiscal year 1987. Of the total Isthmian force, 7,538 were permanent and 984 temporary. Of the permanent work force, 6,347 (84.2%) were Panamanians, 1,075 (14.3%) were U.S. citizens and 116 (1.5%) were third-country nationals. Nineteen persons, all U.S. citizens, were employed by the Commission in New Orleans and Washington, D.C.

The total Commission payroll was $202 million in fiscal year 1988 compared to $196.2 million in fiscal year 1987. Of the total Commission fiscal year 1988 payroll, $141.9 million was paid to non-U.S. citizen employees and $60.1 million to U.S. citizen employees.

EQUAL OPPORTUNITY PROGRAM

The Office of Equal Opportunity administers an equal opportunity program pursuant to public law and administrative directive for Commission employees and applicants for employment.

Employment of the severely disabled increased for the sixth consecutive year and the agency was commended by the Equal Employment Opportunity Commission for being a model employer of the disabled.

There was an increase in the number of formal EO complaints over the previous fiscal year. Ongoing educational programs included workshops on the prevention of sexual harassment, national origin harassment, and the EEO complaints process. Special emphasis program commemorations included Women's Week activities and National Hispanic Heritage Week. Ongoing monitoring of the Panamanian Preference Program revealed continuing progress in the increased participation of Panamanian nationals at all occupational levels.

The agency's accomplishment of affirmative employment action for fiscal year 1988 is reflected in the composition of the work force by sex and minority group designation.

Composition of the Work Force
By Sex:

Male	88.0%
Female	12.0%

By Minority Group Designation:

Hispanics	*Blacks*	*Whites*	*Orientals*	*Amer. Ind.*
62.8%	23.3%	12.2%	1.4%	0.3%

PUBLIC AFFAIRS

The Office of Public Affairs is responsible for handling all public affairs, guide services and informational activities of the Panama Canal Commission, both locally and internationally. In this connection, through the Commission publication The Panama Canal Spillway, local press releases, video tapes, films and exhibits, matters of related interest were disseminated to the work force and the public at large. The Graphic Branch assisted in the accomplishment of this task by providing a broad range of photographic and audio-visual support services.

The workload of the Office of Public Affairs, in general, increased measurably as the political events in Panama became more extreme in the second quarter of this fiscal year. These events generated frequent visits to the Canal by international media representatives who were interested in developing their assessment of the impact of such events on the Panama Canal and future operations.

The guide service handled a total of 308,930 visitors at the Canal and conducted 569 VIP tours. Visitors included representatives of major news services, accompanied by photographers and film crews; officials from various sectors of the shipping industry and shipping related publications; and government and business officials from around the world.

OMBUDSMAN

The Office of the Ombudsman was established pursuant to implementing legislation of the Panama Canal Treaty of 1977. The office responds to employees and dependents' complaints, grievances, and requests for information; and channels many issues to the proper authorities for processing under existing statutes or administrative regulations. Generally, the Office of the Ombudsman investigates administrative problems, inefficiencies, omissions and policy conflicts existing within the Panama Canal Commission and other U.S. Government agencies on the Isthmus of Panama resulting from the Treaty. The office provides the widest latitude possible for handling problems affecting employee morale and the quality of life.

A total of 181 cases were processed by the Ombudsman as compared to 275 in fiscal year 1987, representing a 34 percent reduction in the number of cases handled. While these statistics reflect a decline in the caseload, heavy demands were placed on the Office of the Ombudsman as a result of intensified political unrest in Panama. A "hotline," which was activated in late FY 1987, was expanded and staffed on an extended daily schedule. It is estimated that, at peak periods during the political crisis, this office handled

some 50 calls per hour. The vast majority of the calls originated from Commission employees, dependents, area residents and annuitants previously employed with U.S. Federal agencies on the Isthmus, expressing deep concerns over hardships precipitated or magnified by the ongoing political problems and other problems which have established a pattern of routine since entry into force of the Panama Canal Treaty of 1977.

INDUSTRIAL RELATIONS

The collective bargaining agreement between the Commission and the Marine Engineers Beneficial Association expired in October 1987. Although at year's end, renegotiation of the new agreement had not been finalized, the terms and conditions of the expired contract will continue in effect until a new agreement is negotiated.

Relations with the pilots union took on a more constructive note. The current branch agent has demonstrated a willingness to resolve differences informally instead of immediately resorting to third party machinery. Effective July 31, the collective bargaining agreement with the pilots union was amended and renewed for 5 years. The new agreement will expire on July 30, 1993.

The collective bargaining agreement with the firefighters union was again extended for an additional year, until April of 1989.

In FY 1987, it was reported that the Commission was one of several U.S. Federal agencies affected by decisions of the Federal Labor Relations Authority (FLRA) that certain pay and money-related issues are negotiable where, as in the case of the Commission, these matters are not specifically prescribed by law. During FY 1988, based on circuit court decisions reversing the FLRA in similar decisions affecting other agencies, the Commission asserted during negotiations that these issues are non-negotiable. Although two different circuits have subsequently found negotiable such matters, the Commission will continue to assert they are not within the scope of bargaining until the issue is finally resolved by the courts.

Because of the continuing local political problems, there was a marked increase in union involvement over issues which, under normal circumstances, would not fall within a labor organization's purview.

GENERAL COUNSEL

On December 23, 1985, the President signed into law the Panama Canal Amendments Act, Public Law 99-209, which authorized the Commission to settle all vessel-accident claims, regardless of the amount and irrespective of the situs of the accident. Prior to the enactment of this Act, the Commission was precluded from considering claims of more than $120,000 for out-of-locks accidents. At the time of the passage of The Panama Canal Amendments Act, 30 out-of-locks vessel-accident claims had been filed and were pending with either the United States Congress or the Commission. Since the enactment of the Amendments Act, the Commission has steadily reduced this backlog of vessel-accident claims. By the end of fiscal year 1988, 27 of these claims had been settled, and $16,155,672 (out of a total of $23,112,157 claimed) had been paid to the aggrieved shipowners.

The Amendments Act also permitted dissatisfied claimants to sue the Commission for out-of-locks vessel-accident damage. Two such lawsuits were filed before the passage of the Amendments Act and an additional eight have been filed since its enactment. By September 30, 1988, one case had been dismissed by the court, and six suits had been settled for payments totaling $2,084,899. The remaining three lawsuits are pending resolution.

The principal area of settlement in the Office of General Counsel was in the area of marine accidents where 26 claims for vessel damage, totaling $3,889,164, were settled in the amount of $1,382,378.

Legislation has been passed by the Congress and sent to the President for signature which will authorize the establishment of a fund to provide for the accumulation of monies to meet the Panama Canal Commission's obligations under the Federal Employees' Compensation Act, and for other purposes.

Historically, the Panama Canal enterprise had been one of only two federal agencies charged with the responsibility of administering the Federal Employees' Compensation Act (FECA) 5 U.S.C. 8101, et seq. for its own employees. That function was first delegated by President Wilson in 1916, carried forward to the Canal Zone Government in 1951, and to the Commission upon its establishment on October 1, 1979, pursuant to the implementation of the Panama Canal Treaty of 1977, TIAS 10031. Under 5 U.S.C. 8146 (as amended by section 3302 of the 1979 Panama Canal Act) and section 1-307 of Executive Order 12215 of May 27, 1980, the Commission has administered the FECA program for present and former employees who have sustained injuries during the performance of their duties with this agency and those which preceded it.

In light of the treaty-mandated December 31, 1999, disestablishment of the Commission, and the fact that it is currently the only agency (with the exception of the Office of Worker's Compensation Programs) which administers the FECA program for its employees, the agency's Board of Directors has approved the transfer of the FECA program to the OWCP.

President Reagan signed Executive Order 12652 on September 19, 1988, which authorizes the transfer effective January 1, 1989. In accordance with that transfer, the new law will enable the Commission to deposit sufficient funds into the Panama Canal Commission Compensation Fund to meet the actuarially determined costs of the program. Covered employees who have sustained performance of duty injuries will thus be assured of benefits as provided by the FECA law, despite the disestablishment of this agency at the expiration of the treaty period.

The salaries of employees of agencies and instrumentalities of the United States are generally not subject to garnishment; however, specific legislation was enacted on January 1, 1975, which authorized garnishment for the limited purpose of complying with alimony and child support orders issued by U.S. Courts of competent jurisdiction. The law also recognized foreign court orders upon execution of an agreement between the United States and the country in which the order was issued. Following entry into force of the

Panama Canal Treaty of 1977, and disestablishment of the Canal Zone courts, no local judicial forum remained available to persons seeking redress in accordance with the foregoing statute.

After a lengthy period of discussion and negotiation between the two governments, Diplomatic Note No. 012 and DGPE/EUC/19.1.13, were exchanged on February 22, 1988. In accordance therewith, the Commission is now authorized to honor judicial orders for the garnishment of alimony and child support issued by certain Panamanian courts in the same manner as those issued by U.S. Courts of competent jurisdiction.

In implementation of the foregoing agreement, the Office of General Counsel has undertaken the review of incoming garnishment process to insure legal sufficiency and compliance with the statute. Coordination (including informal seminars and individual briefings) with appropriate judicial personnel (both in the immediate area and the interior) has also served to facilitate the implementation of the agreement. To date, 80 orders have been processed and one more is currently in the pipeline. Most of the 30 which did not meet the statutory criteria for garnishment were resubmitted, and 14 have resulted in voluntary alimony or child support allotments.

Chapter V

FINANCIAL REPORT

FINANCIAL STATEMENTS FOR THE FISCAL YEAR ENDED SEPTEMBER 30, 1988

Effective January 1, 1988, the Omnibus Budget Reconciliation Act of 1987, Public Law 100-203, converted the Panama Canal Commission from an appropriated fund agency to a revolving fund agency. In accordance with this legislation, the Panama Canal Commission fund was terminated and its unappropriated balance plus all unexpended balances of appropriations still available to the Commission were transferred to a newly established fund entitled the Panama Canal Revolving Fund. In addition, tolls and all other receipts of the Commission are deposited into the new revolving fund.

The financial statements of the Panama Canal Commission, appearing as Tables 1 through 6, with accompanying notes, present the financial position of the Commission at September 30, 1988, and the results of its operations for the fiscal year then ended. Incorporated as Table 4 of the statements is the Statement of Cash Flows. This table, as required by the Financial Accounting Standards Board in Statement of Financial Accounting Standards No. 95, replaces the Statement of Changes in Financial Position. Also, due to the conversion of the Panama Canal Commission from an appropriated fund agency to a revolving fund agency, comparison of fiscal years 1987 and 1988 financial data was not practical. Therefore, only fiscal year 1988 financial data is presented in these statements.

The accounts and statements of the Panama Canal Commission have been examined by the Office of General Auditor of the Commission and are subject to examination by the United States General Accounting Office. Detailed audit reports of the United States General Accounting Office are directed to the Congress and are presented as Congressional documents.

Summary information concerning the operating results and capital expenditures follows:

RESULTS OF OPERATIONS

Fiscal year 1988 operations resulted in a net loss of $1.8 million. This amount plus the $0.6 million loss from fiscal year 1987 operations will be

recovered from subsequent revenues as required by section 1341(b)(2) of the Panama Canal Act of 1979 (Public Law 96-70).

CAPITAL EXPENDITURES

Accrued capital expenditures for fiscal year 1988 amounted to $27.1 million. The principal expenditures were $3.0 million for replacement of motor vehicles, $2.7 million for purchase of a tugboat, $1.9 million for improvements to the electrical power/communication system, $1.5 million for purchase of a locomotive crane, $1.4 million for replacement of a storage barge, $1.4 million for replacement of the Commission's telephone system, $1.1 million for replacement of locomotive turntables and $0.9 million for improvements to Commission buildings.

Table 1.—Statement of Financial Position

Assets

PROPERTY, PLANT AND EQUIPMENT:	
At cost (Note 2c)	$936,111,054
Less accumulated depreciation and valuation allowances (Notes 2e and 3)	464,872,854
	471,238,200
CURRENT ASSETS:	
Cash: (note 4)	
U.S. Treasury account	138,872,443
Cash in commercial banks and on hand	5,800,906
Postal, other trust funds and cash in transit	2,442,789
	147,116,138
Accounts receivable	14,894,155
Inventories, less allowance for obsolete and excess inventory of $400,000 (Note 2g)	36,928,949
Other current assets	382,019
	199,321,261
OTHER ASSETS:	
Deferred charges:	
Cost of early retirement benefits (Note 2h)	166,584,000
Cost of work injuries compensation benefits (Notes 2m and 6)	79,126,504
Retirement benefits to certain former employees of predecessor agencies (Note 2h)	6,746,000
Other	
	252,456,504
Unrecovered costs due from subsequent revenues (Notes 2b and 5)	2,408,665
	254,865,169
TOTAL ASSETS	$925,424,630

The accompanying notes are an integral part of this statement.

September 30, 1988

Capital and Liabilities

CAPITAL:	
Investment of the United States Government:	
Interest-bearing (10.379%) (Note 7)	$102,773,553
Non-interest-bearing	371,024,286
	473,797,839
CURRENT LIABILITIES:	
Accounts payable:	
U.S. Government agencies	4,245,938
Government of Panama	8,475,439
Other	34,802,392
	47,523,769
Accrued liabilities:	
Employees' leave	44,033,669
Salaries and wages	7,139,405
Cost of early retirement benefits (Note 2h)	15,144,000
Cost of work injuries compensation benefits (Notes 2m and 6)	7,033,467
Retirement benefits to certain former employees of predecessor agencies (Note 2h)	844,000
Employees' repatriation	687,000
Marine accident claims	13,822,471
Other	1,923,101
	90,627,113
Other current liabilities:	
Advances for capital-unexpended (Notes 2d and 11)	14,332,082
Other	1,889,140
	16,221,222
	154,372,104
DEFERRED CREDIT:	
Advances for capital being amortized (Notes 2d and 11)	40,941,046
LONG-TERM LIABILITIES AND RESERVES:	
Cost of early retirement benefits (Note 2h)	151,440,000
Cost of work injuries compensation benefits (Notes 2m and 6)	72,093,037
Retirement benefits to certain former employees of predecessor agencies (Note 2h)	5,902,000
Employees' repatriation	6,053,000
Lock overhauls (Note 2i)	211,633
Marine accidents (Note 2j)	17,683,380
Casualty losses (Note 2j)	941,882
Floating equipment overhaul (Note 2k)	1,988,709
	256,313,641
TOTAL CAPITAL AND LIABILITIES	$925,424,630

The accompanying notes are an integral part of this statement.

Table 2.—Statement of Operations and Non-Interest-Bearing Investment
Fiscal Year Ended September 30, 1988

OPERATING REVENUES:	
Tolls revenue	$339,319,326
Other revenues	110,089,660
Total operating revenues	449,408,986
OPERATING EXPENSES:	
Payments to the Government of Panama:	
Public services	10,000,000
Fixed annuity	10,000,000
Tonnage	59,635,398
	79,635,398
Maintenance of channels and harbors	42,258,524
Navigation service and control	77,384,665
Locks operation	47,709,751
General repair, engineering and maintenance services	25,071,192
Supply and logistics	21,030,820
Utilities	31,895,242
Housing operations	5,553,796
General and administrative	73,107,100
Interest on interest-bearing investment (Note 7)	11,250,757
Other	36,329,982
Total operating expenses	451,227,227
NET OPERATING REVENUE (LOSS) (Notes 2b and 5)	(1,818,241)

Table 3.—Statement of Changes in the Investment of the United States Government
Fiscal Year Ended September 30, 1988

	Invested Capital					
	Interest-Bearing	*Non-Interest-Bearing*	*Emergency Fund*	*Operating Funds*	*Capital Funds*	*Total*
INVESTMENT AT OCTOBER 1, 1987	$64,711,276	$287,336,291	$10,000,000	$55,658,038	$26,086,026	$443,791,631
Appropriation by the Congress for fiscal year 1988	.....	.....	.....	420,588,000	33,715,000	454,303,000
	64,711,276	287,336,291	10,000,000	476,246,038	59,801,026	898,094,631
Funds transferred by Public Law 100-203, effective January 1, 1988:						
Transferred from emergency fund	.....	10,000,000	(10,000,000)	.....	.....	.....
Transferred from operating funds	.....	202,316,621	.....	(202,211,390)	.....	105,231
Transferred from capital funds	.....	54,060,961	.....	.....	(54,060,961)	.....
Adjustment for interest accrued 10/1/79-12/31/85	61,653,129	(61,653,129)	.....	.....	.....	.....
	61,653,129	204,724,453	(10,000,000)	(202,211,390)	(54,060,961)	105,231
	126,364,405	492,060,744	.....	274,034,648	5,740,065	898,199,862
INCREASES IN INVESTMENT:						
Plant reactivations	.....	.....	.....	.....	.....	.....
Prior year receipts deposited into the U.S. Treasury	.....	1,088,117	.....	.....	.....	1,088,117
Expenditures from capital appropriations	5,740,065	.....	.....	.....	(5,740,065)	.....
Expenditures from operating appropriations	109,394,688	.....	.....	(109,394,668)	.....	.....
Expenditures from Panama Canal Revolving Fund	317,977,051	(317,977,051)	.....	.....	.....	.....
Repayment to the General Fund of the U.S. Treasury for fiscal year 1980 appropriation	85,582,579	(85,582,579)	.....	.....	.....	.....
Payment of interest accrued 10/1/79-12/31/85	.....	(61,653,129)	.....	.....	.....	(61,653,129)
Funds covered into the U.S. Treasury	(85,582,579)	.....	.....	.....	.....	(85,582,579)
Property transferred from other U.S. Government agencies	.....	.....	.....	.....	.....	.....
Uncovered costs due from subsequent revenues (Notes 2b and 5)	.....	1,818,241	.....	.....	.....	1,818,241
	433,111,784	(462,306,401)	.....	(109,394,668)	(5,740,065)	(144,329,350)
DECREASES IN INVESTMENT:						
Tolls and other receipts deposited into PCC Fund	112,765,084	.....	.....	.....	.....	112,765,084
Tolls and other receipts deposited into Revolving Fund	343,508,525	(343,508,525)	.....	.....	.....	.....
Due U.S. Treasury for undeposited receipts	.....	420,341	.....	.....	.....	420,341
Property transferred to the Government of Panama	51,992	.....	.....	.....	.....	51,992
Property transferred to other U.S. Government agencies	377,035	.....	.....	.....	.....	377,035
Unwarranted appropriated funds	.....	.....	.....	164,639,980	.....	164,639,980
Net loss (Notes 2b and 5)	.....	1,818,241	.....	.....	.....	1,818,241
	456,702,636	(341,269,943)	.....	164,639,980	.....	280,072,673
INVESTMENT AT SEPTEMBER 30, 1988	$102,773,553	$371,024,286	$.....	$.....	$.....	$473,797,839
	(Note 7)					

The accompanying notes are an integral part of this statement.

Table 4.—Statement of Cash Flows

INCREASE (DECREASE) IN CASH			
Cash Flows from Operating Activities:			
Cash received:			
Tolls	$339,319,326		
Other collections	120,011,727		
Increase in receivables	(3,057,444)		
Total cash received		$456,273,609	
Cash disbursed:			
Operating expenditures	(463,389,231)		
Increase in inventory	(1,789,780)		
Increase in liabilities	59,367,762		
Total cash disbursed		(405,811,249)	
Net cash from operations			$50,462,360
Other adjustments:			
Cash from Panama Canal Commission Fund		289,663,021	
Restoration of funds previously withdrawn		105,231	
Operating revenues deposited into Panama Canal Commission Fund		(112,765,084)	
Net operating cash received from Treasury			177,003,168
Net cash provided by/(used in) operating activities			227,465,528
Cash Flows from Extraordinary Activities:			
Payment of interest on net direct investment (Note 9)		(61,653,129)	
Repayment of 1980 appropriation (Note 9)		(85,582,579)	
Net cash provided by/(used in) extraordinary activities			(147,235,708
Cash Flows from Capital Activities:			
Capital expenditures		(27,069,345)	
Decrease in liabilities		(231,190)	
Net cash provided by/(used in) capital activities			(27,300,535
Cash Flows from Postal and Trust funds:			
Postal funds		(6,630)	
Trust funds		12,048	
Net cash provided by/(used in) postal and trust fund activities			5,418
Net increase/(decrease) in cash			52,934,703
Cash, beginning of year			94,181,435
Cash, end of year			$147,116,138
			(Note 8)

The accompanying notes are an integral part of this statement.

Fiscal Year Ended September 30, 1988

RECONCILIATION OF NET REVENUE (LOSS) TO NET CASH PROVIDED BY OPERATING ACTIVITIES

Net Revenue (loss)		$ (1,818,241)
Adjustments to reconcile net revenue (loss) to net cash provided by operating activities:		
Adjustments not requiring outlay of cash:		
Depreciation	21,352,682	
Provision for lock overhauls	4,387,000	
Provision for casualty losses	2,901,952	
Provision for floating equipment repairs	4,019,000	
Advances for capital	10,458,055	
Other	(1,640,029)	41,478,660
Adjustments requiring outlay of cash:		
Lock overhauls expenditures	(5,699,523)	
Casualty losses expenditures	(5,671,166)	
Floating equipment repair expenditures	(3,678,624)	(15,049,313)
Other adjustments:		
Cash from Panama Canal Commission Fund	289,663,021	
Restoration of funds previously withdrawn	105,231	
Operating revenues deposited into Panama Canal Commission Fund	(112,765,084)	177,003,168
Changes in operating assets and liabilities:		
Increase in receipt receivables	(3,057,444)	
Increase in funded receivables	(2,091,761)	
Increase in inventories	(1,789,780)	
Decrease in other assets	1,505,355	
Increase in liabilities	31,284,884	25,851,254
Total adjustments		229,283,769
Net cash provided by/(used in) operating activities		$227,465,528
		(Note 8)

The accompanying notes are an integral part of this statement.

Table 5.—Statement of
Fiscal Year Ended

SOURCE OF APPROPRIATIONS:	
Operating funds:	
Current year operating appropriation	$407,088,000
Appropriation Public Law 99-195 (indefinite-funded interest)	13,500,000
	420,588,000
Restoration of funds previously withdrawn	105,231
Obligated operating funds brought forward:	
Fiscal year 1980	311,229
Fiscal years—Merged	4,006,116
Fiscal year 1986	5,695,374
Fiscal year 1987	45,645,319
	55,658,038
	476,351,269
Capital funds:	
Current year capital appropriation (no year)	33,715,000
Obligated capital funds brought forward:	
Fiscal year 1980	12,070
Fiscal years 1981 through 1987	23,766,934
	23,779,004
Unobligated capital funds brought forward (no year):	
Fiscal year 1980	8,257
Fiscal years 1981 through 1987	2,298,765
	2,307,022
	59,801,026
Emergency fund (no year)	10,000,000
TOTAL SOURCE OF APPROPRIATIONS	$546,152,295
	(Note 10)

The accompanying notes are an integral part of this statement.

Status of Appropriations
September 30, 1988

APPLICATION OF APPROPRIATIONS:	
Appropriations available	$546,152,295
Less appropriate expenditures—1st Quarter:	
Expenditures from operating appropriations:	
Fiscal year 1980	.....
Fiscal years—Merged	(496,584)
Fiscal year 1986	447,217
Fiscal year 1987	32,653,300
Fiscal year 1988	76,790,735
	109,394,668
Expenditures from capital appropriations:	
Fiscal year 1980	12,506
Fiscal years 1981 through 1988	5,727,559
	5,740,065
	115,134,733
Less funds transferred to the revolving fund:	
From Operations:	
Fiscal year 1980	311,229
Fiscal year 1980 restored	105,231
Fiscal years—Merged	4,502,700
Fiscal year 1986	5,248,157
Fiscal year 1987	12,992,019
Fiscal year 1988	179,157,285
Emergency fund	10,000,000
	212,316,621
From Capital:	
Fiscal year 1980	7,821
Fiscal years 1981 and 1988	54,053,140
	54,060,961
	266,377,582
Less funds returned to the U.S. Treasury	164,639,980
BALANCE OF APPROPRIATIONS, SEPTEMBER 30, 1988	$.....
	(Note 10)

The accompanying notes are an integral part of this statement.

Table 6.—Statement of Property, Plant and Equipment
September 30, 1988

	Estimated service life	*Cost*	*Depreciation and valuation allowances*
Titles and treaty rights	40 years	$14,728,889	$5,615,390
Interest during construction	.....	50,892,311	50,892,311
Canal excavation, fills and embankments	15-100 years	347,555,199	131,595,146
Canal structures and equipment	4-100 years	317,897,397	151,022,970
Supporting and general facilities	5-100 years	131,459,891	83,223,723
Facilities held for future use	10-100 years	2,824,202	2,377,516
Plant additions in progress	.....	30,607,367	.....
Suspended construction projects	.....	40,145,798	40,145,798
TOTAL		$936,111,054	$464,872,854

The accompanying notes are an integral part of this statement.

NOTES TO FINANCIAL STATEMENTS

1. Conversion to a Revolving Fund Agency.

Public Law 100-203, converted the Panama Canal Commission from an appropriated fund agency to a revolving fund agency effective January 1, 1988. This conversion to a revolving fund financial structure did not result in any major change in the accounting policies and principles of the Commission.

2. Summary of Significant Accounting Policies.

The Comptroller General of the United States approved the Accounting Principles and Standards Statement of the Panama Canal Commission in his letter dated September 14, 1982. A summary of significant accounting policies follows:

a. *Accounting and reporting.* As required by section 1311(a) of the Panama Canal Act of 1979 (Public Law 96-70), hereinafter referred to as the Act, the accounts of the Commission are maintained pursuant to the Accounting and Auditing Act of 1950. This requires that the principles, standards and related requirements be met, as prescribed by the Comptroller General of the United States, after consulting with the Secretary of the Treasury and the Director of the Office of Management and Budget concerning their accounting, financial reporting and budgetary needs. The Accounting and Auditing Act of 1950 also requires that the accounts be maintained on an accrual basis.

b. *Cost recovery.* As required by section 1341(e)(1) of the Act, the application of generally accepted accounting principles to the Panama Canal Commission, a United States Government agency comparable to a rate-regulated public utility, determines the manner in which costs are recognized. The basis for tolls rates is prescribed in section 1602(b) of the Act. This section of the Act, known as the "statutory tolls formula," provides that:

> "Tolls shall be prescribed at rates calculated to produce revenues to cover as nearly as practicable all costs of maintaining and operating the Panama Canal, together with the facilities and appurtenances related thereto, including unrecovered costs incurred on or after the effective date of this Act, interest, depreciation, working capital, payments to the Republic of Panama pursuant to paragraph 5 of Article III and paragraph 4(a) and (b) of Article XIII of the Panama Canal Treaty of 1977, and capital for plant replacement, expansion, and improvements. Tolls shall not be prescribed at rates calculated to produce revenues sufficient to cover payments to the Republic of Panama pursuant to paragraph 4(c) of Article XIII of the Panama Canal Treaty of 1977."

Under this statutory tolls formula, any unrecovered costs are to be recovered from subsequent revenues. The amount for recovery from

subsequent revenues is transferred from Invested Capital to an account within the Other Assets classification. Unrecovered costs are charged back to Invested Capital to the extent subsequent annual revenues exceed annual costs.

c. *Property, plant and equipment.* Property, plant and equipment are recorded at cost, or if acquired from another United States Government agency, at the value determined by the Director of the Office of Management and Budget. Administrative and other related general expenses are recovered currently and therefore not capitalized. The cost of minor items of property, plant and equipment is charged to expense as incurred.

d. *Advances for capital.* A portion of tolls in excess of depreciation recoveries may be programmed annually by the Board of Directors for plant replacement, expansion, or improvements. In fiscal year 1988 no amounts were programmed for such purpose. Such funds are considered capital advances from Canal users. Upon utilization, these advances are amortized through an offset to depreciation expense in an amount calculated to approximate the depreciation on assets acquired with such advances.

e. *Depreciation.* Property, plant and equipment are depreciated over their estimated service lives at rates computed using a straight-line method with additional annual depreciation, identified as composite, to provide for premature plant retirements.

The recurring costs of dredging the waterway are charged to expense. Non-recurring dredging costs for substantial improvements and betterments to the waterway are considered additions to plant and are capitalized and depreciated over their estimated service lives.

f. *Accounts receivable.* Uncollectible accounts receivable of the Panama Canal Commission are recognized as a reduction in revenue when written off. Any subsequent collections of Commission accounts receivable previously written off are recorded as revenue.

g. *Inventories.* Operating materials and supplies are stated at average cost, plus cost of transportation to the ultimate destination on the Isthmus of Panama. An allowance has been established to reflect the estimated cost of obsolete and excess stock.

h. *Retirement benefits.* Employer payments to the contributory United States Civil Service Retirement System, to the Federal Employee Retirement System, and to the Republic of Panama Social Security System are charged to expense. The Commission has no liability for future payments to employees under these systems.

Non-United States citizen employees, who retired from predecessor agencies prior to October 5, 1958, are not covered by the United States Civil Service Retirement System but do receive benefits under a separate annuity plan. Payments made under this annuity plan are recorded as a current year expense. Annual amount expended in fiscal year 1988 was $1.3 million. The Commission's liability for future annuity payments to these former employees or their eligible widows is reflected in the balance sheet as retirement benefits to certain former employees of predecessor agencies and an equal amount is recorded as a deferred charge.

As required by the Act, the Panama Canal Commission is liable for the increase in the unfunded liability of the United States Civil Service Retirement Fund which is attributable to benefits payable from that fund to, or on behalf of, employees and their survivors under the early retirement provisions of the Act. The annual installment to liquidate the increased liability is determined by the Office of Personnel Management.

i. *Reserve for lock overhauls.* A reserve is provided through an annual charge to expense to cover the estimated cost of periodic lock overhauls.

j. *Reserve for casualty losses.* A reserve is provided through an annual charge to expense to cover the estimated cost of marine accidents and other casualty losses.

k. *Reserve for floating equipment overhaul.* A reserve is provided through an annual charge to expense to cover the estimated cost of overhauls to the Commission tugboat fleet.

l. *Housing use rights.* No monetary value is assigned to the rights granted to the United States Government by the Republic of Panama to use Canal Area housing transferred to the Government of Panama under the terms of the Panama Canal Treaty of 1977. The cost to manage, maintain and provide livability improvements to these quarters is charged to expense. Rental income is included in other revenues.

m. *Work injuries compensation benefits.* Under provisions of the Act, the Panama Canal Commission is liable for payment of all benefits due under the Federal Employees' Compensation Act (FECA) which provided compensation for workplace injuries for eligible employees. The Commission accounts for these costs on an accrual basis.

3. Plant Valuation Allowances.

At July 1, 1951, certain valuation allowances for property, plant and equipment transferred from the Panama Canal (agency) to the Panama Canal Company and the Canal Zone Government were established, to reduce to usable value the costs of the assets transferred. At October 1, 1979, such valuation allowances as were applicable to the assets transferred from the Panama Canal Company and the Canal Zone Government to the Panama Canal Commission were carried forward and are comprised of: (a) $4.5 million at September 30, 1988, to reduce to usable value the cost of property, plant and equipment transferred; (b) $50.9 million at September 30, 1988, to offset interest costs imputed for the original Canal construction period; and (c) $42.3 million at September 30, 1988 to offset the cost of defense facilities and suspended construction projects, the latter being principally the partial construction of a third set of locks abandoned in the early part of World War II.

4. Cash and Fund Balances.

The cash balances are maintained to satisfy the solvency requirements as defined in Section 86.6 Office of Management and Budget Circular A-34, Instructions on Budget Execution, under which the incurring of obligations in excess of budgetary resources is a violation of the Antideficiency Act. All cash exceeding current operating requirements is kept on deposit with the U.S. Treasury.

5. Unrecovered Costs Due From Subsequent Revenues.

Pursuant to the provisions of section 1602 (b) of the Panama Canal Act of 1979 (Public Law 96-70), the net loss of $0.6 million from fiscal year 1987 and $1.8 from fiscal year 1988 operations, totalling $2.4 million, were deferred as an unearned cost to be recovered from subsequent revenues. Also, in accordance with section 1341(b)(2) of the Act such unearned costs must be recovered from any future net operating revenue due to the Government of Panama.

6. Cost of Work Injuries Compensation.

The Commission administers a program to compensate certain employees for death and disability resulting from workplace injuries or illnesses as set forth in the Federal Employees' Compensation Act (FECA). All United States citizen employees are eligible for coverage, as are non-United States citizen employees hired prior to October 1, 1979, who elected coverage on that date. As provided by FECA, employees and certain dependents are beneficiaries for various periods that can extend to life.

The liability and deferred charge recorded in these statements reflect the payments due to a Department of Labor fund established pursuant to Public Law 100-705. The Department of Labor will be reimbursed from this fund for all expected future payments for accidents occurring prior to October 1, 1988, adjusted for inflation and interest earned. This is a change from the fiscal year 1987 presentation where there was no fund established and the amounts in both accounts were stated at net present value.

7. Interest-Bearing Investment of the United States Government.

The interest-bearing investment of the United States Government in the Panama Canal is determined based on section 1603(a) of the Act. The interest-bearing investment of the United States Government at September 30, 1988, was determined as follows:

	Millions of Dollars	
Investment at September 30, 1987		$64.7
Fiscal year 1988 transactions:		
Adjustment for interest accrued 10/1/79-12/31/85	$61.7	
Disbursements	433.1	
Receipts	(456.3)	
Net property transfers	(0.4)	
Net change		38.1
Investment at September 30, 1988		$102.8

8. Statement of Cash Flows.

Reflected on this statement is the conversion of the Panama Canal Commission from an appropriated fund agency to a revolving fund agency three months into fiscal year 1988. As such, the statement identifies appropriated funds received during the first quarter of the fiscal year.

9. Extraordinary Activities.

In addition to converting the Panama Canal Commission to a revolving fund agency, Public Law 100-203, The Budget Reconciliation Act of 1987,

provided: (a) for restoring $61.7 million to the interest-bearing investment of the United States Government in the Panama Canal by transferring interest collections prior to January 1, 1986 to the General Fund of the U.S. Treasury, and (b) for reimbursement to the General Fund of the U.S. Treasury of the $85.6 million balance of the 1980 appropriation to the Commission.

10. Statement of Status of Appropriations.

This statement reflects the conversion of the Panama Canal Commission from an appropriated fund agency to a revolving fund agency. As such, the statement identifies: (a) expenditures made by the Commission during the first quarter operations as an appropriated fund agency, (b) funds transferred to the revolving fund January 1, 1988 and (c) funds returned to the U.S. Treasury, also as of January 1, 1988.

11. Advances for Capital-Transit Booking System Fees.

With the approval of the Board of Directors, a system was activated in fiscal year 1983 whereby shippers, for a fee, can make an advance reservation for vessel transit. This system generated funds of $8.5 million in fiscal year 1988. Such funds are considered capital advances from Canal users. By direction of the Board of Directors, these fees are set aside for capital improvements. Upon utilization, these advances are amortized through an offset to depreciation expense in an amount calculated to approximate the depreciation on assets acquired with such advances.

12. Contingent Liabilities and Commitments.

In addition to recorded liabilities, the estimated maximum contingent liability which could result from pending claims and lawsuits was $18.6 million at September 30, 1988. In the opinion of management and Commission counsel, these pending claims and lawsuits will be resolved with no material adverse effect on the financial condition of the agency.

Commitments under uncompleted construction contracts and unfilled purchase orders amounted to $42.2 million at September 30, 1988. Of this amount, $0.1 million in unfilled purchase orders were prepaid as of September 30, 1988.

Cash and negotiable securities of a kind acceptable by the United States Government in the amount of $11.6 million were held by the United States depositories designated by the Panama Canal Commission at September 30, 1988 to guarantee payment by third parties of their obligations.

The Panama Canal Treaty of 1977, Article XIII, paragraph 4(c), provides that an annual amount of up to $10 million per year be paid to the Government of Panama out of operating revenues to the extent that such revenues exceed expenditures. Payment to the Government of Panama is subject to the limitations set forth in section 1341(e) of the Act. In the event operating revenues in any year do not produce a surplus sufficient to cover this payment, the unpaid balance shall be paid from operating surpluses in future years up to the amount available from these surpluses. As of September 30, 1988, the balance contingently payable to the Government of Panama amounts to $81.1 million.

13. Borrowing Authority.

The Panama Canal Commission has authority to borrow funds from the U.S. Treasury not to exceed $100 million outstanding at any time for any of the purposes of the Commission. At September 30, 1988 none of this amount had been borrowed.

14. Treaty Impact.

On September 7, 1977, the United States of America and the Republic of Panama signed the Panama Canal Treaty of 1977. The Treaty provided for the establishment of the Panama Canal Commission on October 1, 1979, to assume certain operational responsibilities for the Canal until December 31, 1999. When the Treaty terminates on December 31, 1999, the Republic of Panama shall assume total responsibility for the management, operation, and maintenance of the Panama Canal, which shall be turned over in operating condition and free of liens and debts, except as the two parties may otherwise agree. The effects of these long-range requirements are not considered in the financial statements.

Chapter VI

STATISTICAL TABLES

Shipping Statistics

Table 1.—Panama Canal Traffic—Fiscal Years 1979 Through 1988

Fiscal year	Total traffic: Number of transits	Total traffic: Tolls	Total traffic: Long tons of cargo	Traffic assessed tolls on net tonnage basis: Number of transits	Traffic assessed tolls on net tonnage basis: Panama Canal net tonnage	Traffic assessed tolls on displacement tonnage basis: Number of transits	Traffic assessed tolls on displacement tonnage basis: Displacement tonnage
OCEANGOING COMMERCIAL TRAFFIC [1]							
1979	12,935	208,376,741	154,110,866	12,902	167,470,601	33	136,600
1980	13,507	291,838,590	167,214,935	13,476	182,063,175	31	137,593
1981	13,884	301,762,600	171,221,762	13,847	188,656,491	37	111,418
1982	14,009	323,958,366	185,452,332	13,976	202,884,207	33	129,684
1983	11,707	285,983,805	145,590,759	11,668	169,503,918	39	132,431
1984	11,230	286,677,844	140,470,818	11,199	162,335,342	31	116,335
1985	11,515	298,497,802	138,643,243	11,498	168,941,997	17	86,623
1986	11,925	321,073,748	139,945,181	11,901	182,750,830	24	73,631
1987	12,230	328,372,714	148,690,380	12,206	186,414,955	24	130,129
1988	12,234	337,866,211	156,482,641	12,209	191,505,883	25	106,599
OCEANGOING U.S. GOVERNMENT TRAFFIC [1]							
1979	111	1,054,169	357,482	80	726,755	31	207,640
1980	101	1,515,326	396,481	73	844,748	28	217,055
1981	89	1,241,442	301,776	68	705,936	21	143,121
1982	110	1,546,746	285,451	67	794,282	43	309,206
1983	125	1,721,925	354,873	77	812,840	48	350,699
1984	137	2,388,272	329,607	88	1,131,865	49	410,682
1985	129	2,223,938	259,524	85	1,148,311	44	248,967
1986	85	1,553,037	176,853	53	708,616	32	309,161
1987	78	1,384,125	205,701	46	662,286	32	239,023
1988	69	1,361,393	296,140	46	714,055	23	129,545
FREE OCEANGOING TRAFFIC [1 2]							
1979	10	.....	1	8	4,527	2	2,194
1980	6	.....	.....	3	1,686	3	4,810
1981	11	.....	.....	4	2,248	7	8,544
1982	23	.....	.....	9	5,010	14	21,903
1983	14	.....	2,504	9	9,119	5	5,986
1984	17	.....	.....	4	2,224	13	21,025
1985	10	.....	20	4	2,731	6	8,771
1986	13	.....	.....	1	556	12	20,759
1987	5	.....	5	4	2,224	1	1,300
1988	15	.....	.....	6	3,312	9	16,765
TOTAL OCEANGOING TRAFFIC [1]							
1979	13,056	209,430,910	154,468,349	12,990	168,201,883	66	346,434
1980	13,614	293,353,916	167,611,416	13,552	182,909,609	62	359,458
1981	13,984	303,004,042	171,523,538	13,919	189,364,675	65	263,083
1982	14,142	325,505,112	185,737,783	14,052	203,683,499	90	460,793
1983	11,846	287,705,730	145,948,136	11,754	170,325,877	92	489,116
1984	11,384	289,066,116	140,800,425	11,291	163,469,431	93	548,042
1985	11,654	300,721,740	138,902,787	11,587	170,093,039	67	344,361
1986	12,023	322,626,785	140,122,034	11,955	183,460,002	68	403,551
1987	12,313	329,756,840	148,896,086	12,256	187,079,465	57	370,452
1988	12,318	339,227,604	156,778,781	12,261	192,223,250	57	252,909

Table 1.—Panama Canal Traffic—Fiscal Years 1979 Through 1988 (Continued)

Fiscal year	Total traffic: Number of transits	Total traffic: Tolls	Total traffic: Long tons of cargo	Traffic assessed tolls on net tonnage basis: Number of transits	Traffic assessed tolls on net tonnage basis: Panama Canal net tonnage	Traffic assessed tolls on displacement tonnage basis: Number of transits	Traffic assessed tolls on displacement tonnage basis: Displacement tonnage
SMALL COMMERCIAL TRAFFIC [3]							
1979	936	76,591	7,718	934	69,229	2	94
1980	788	74,898	787	787	52,052	1	57
1981	791	65,604	1,355	788	44,962	3	279
1982	830	73,228	928	826	50,399	4	315
1983	810	73,887	669	810	48,033	....	.....
1984	802	76,921	652	800	48,008	2	145
1985	793	73,710	468	792	45,694	1	110
1986	912	89,577	3,704	904	55,249	8	470
1987	852	90,829	3,282	852	55,827	....	.....
1988	844	79,805	1,422	842	49,245	2	64
SMALL U.S. GOVERNMENT TRAFFIC [3]							
1979	315	14,375	9	48	2,865	267	15,519
1980	276	15,129	.....	29	1,357	247	14,313
1981	225	10,712	2	16	751	209	10,431
1982	241	10,757	.....	12	415	229	10,973
1983	242	11,406	5	12	332	230	11,177
1984	241	11,998	.....	8	336	233	11,282
1985	273	12,464	.....	15	773	258	11,113
1986	316	17,840	.....	20	627	296	16,407
1987	236	11,106	.....	25	987	211	9,572
1988	246	11,917	.....	21	901	225	10,375
SMALL FREE TRAFFIC [2 3]							
1979	55	.....	3	47	2,160	8	632
1980	47	.....	.....	41	2,317	6	560
1981	50	.....	.....	41	2,613	9	1,012
1982	58	.....	70	40	2,803	18	1,172
1983	56	.....	8	39	2,321	17	2,010
1984	96	.....	59	86	4,637	10	1,360
1985	46	.....	3	32	1,721	14	1,103
1986	27	.....	80	20	1,371	7	674
1987	43	.....	57	26	1,451	17	1,012
1988	33	.....	.....	15	1,081	18	1,189
TOTAL PANAMA CANAL TRAFFIC							
1979	14,362	209,521,876	154,476,079	14,019	168,276,137	343	362,679
1980	14,725	293,443,943	167,612,203	14,409	182,965,335	316	374,388
1981	15,050	303,080,358	171,524,895	14,764	189,413,001	286	274,805
1982	15,271	325,589,097	185,738,781	14,930	203,737,116	341	473,253
1983	12,954	287,791,023	145,948,818	12,615	170,376,563	339	502,303
1984	12,523	289,155,035	140,801,136	12,185	163,522,412	338	560,829
1985	12,766	300,807,914	138,903,258	12,426	170,141,227	340	356,687
1986	13,278	322,734,202	140,125,818	12,899	183,517,249	379	421,102
1987	13,444	329,858,775	148,899,425	13,159	187,137,730	285	381,036
1988	13,441	339,319,326	156,780,203	13,139	192,274,477	302	264,537

[1] Oceangoing traffic includes ships of 300 net tons and over, Panama Canal measurement, or of 500 displacement tons and over on vessels paying tolls on displacement basis (dredges, warships, etc.).

[2] Free traffic includes ships of the Colombian and Panamanian Governments and ships transiting for repair by the Commission.

[3] Includes vessels under 300 net tons, Panama Canal measurement (or under 500 displacement tons for vessels assessed on displacement tonnage).

Table 2.—Oceangoing Commercial Traffic by Months—Fiscal Years 1988 and 1987

	Number of Transits		Panama Canal Net Tonnage		Long Tons of Cargo		Tolls	
	1987-88	1986-87	1987-88	1986-87	1987-88	1986-87	1987-88	1986-87
October	1,025	974	16,725,619	15,271,569	13,934,687	12,024,411	$ 29,596,522	$ 27,018,718
November	981	1,063	16,196,649	16,766,740	12,614,114	12,836,251	28,558,801	29,443,943
December	964	1,026	16,002,534	16,371,635	12,580,056	12,435,273	28,250,171	28,668,718
January	1,043	1,024	16,210,013	15,455,363	12,889,541	11,951,475	28,552,643	27,180,307
February	1,061	962	15,905,398	14,626,744	12,936,870	11,558,412	28,093,490	25,653,899
March	1,139	1,072	17,169,470	15,277,765	14,257,185	11,989,051	30,203,768	26,894,455
April	1,069	1,041	16,202,710	15,452,727	12,935,668	12,632,112	28,669,030	27,349,267
May	1,051	1,034	16,466,814	15,761,883	13,037,311	12,380,904	28,966,312	27,778,988
June	991	1,000	14,716,035	15,208,298	12,847,264	12,257,040	25,974,828	26,742,301
July	975	1,020	15,486,718	14,930,602	13,141,603	11,606,948	27,349,496	26,411,019
August	999	1,040	15,950,682	16,207,063	13,628,898	13,582,446	28,144,693	28,511,509
September	936	974	14,473,241	15,084,566	11,679,444	13,436,057	25,506,456	26,719,590
Total	12,234	12,230	191,505,883	186,414,955	156,482,641	148,690,380	$337,866,211	$328,372,714
Average per month	1,020	1,019	15,958,824	15,534,580	13,040,220	12,390,865	$28,155,518	$27,364,393

NOTE: The above includes only commercial vessels of 300 net tons and over, Panama Canal measurement, or of 500 displacement tons and over on vessels paying tolls on a displacement tonnage basis. Statistics on these vessels, except as relates to displacement tonnage, have been included in the table above.

Table 3.—Canal Traffic [1] by Flag of Vessel—Fiscal Year 1988

Flag	Number of transits	Measured tonnage: Panama Canal net	Measured tonnage: Registered gross [2]	Tolls	Long tons of cargo
Antigua-Barbuda	10	27,071	34,376	$45,874	8,714
Argentina	6	42,192	51,073	78,624	48,415
Austria	1	28,421	31,701	52,010	52,750
Bahamas	295	3,759,914	4,445,618	6,697,848	2,458,139
Barbados	6	15,232	21,426	27,875	16,112
Belgium	50	976,343	1,126,210	1,757,953	1,152,339
Bermuda	5	61,761	77,195	113,023	71,702
Brazil	43	600,987	722,616	1,098,479	596,294
Bulgaria	9	85,290	105,750	145,562	29,590
Burma	24	387,378	468,238	701,403	605,707
Canada	4	11,284	6,872	19,182	40
Cayman Islands	11	93,574	71,852	170,409	75,542
Chile	74	724,880	795,107	1,302,680	680,638
Colombia	160	1,422,602	1,330,437	2,569,652	410,169
Costa Rica	2	5,880	3,911	8,585	.....
Cuba	148	837,349	972,990	1,492,985	663,948
Cyprus	641	7,223,928	8,341,176	12,942,778	8,337,484
Czechoslovakia	1	11,716	13,569	21,440	20,074
Denmark	201	4,567,877	5,674,786	8,286,472	2,931,571
Dominican Republic	2	16,908	19,260	27,814	10,291
East Germany	52	341,664	397,329	598,446	128,967
Ecuador	389	3,683,708	4,231,334	6,363,809	2,772,448
El Salvador	2	2,286	2,292	3,338	.....
Faroes	2	2,132	2,262	3,902	1,481
Finland	3	29,951	37,159	50,535	24,033
France	59	1,095,546	899,321	2,018,505	680,256
Gibraltar	1	361	542	527	.....
Greece	685	10,766,945	12,325,445	19,031,526	13,442,588
Guatemala	9	31,536	37,161	55,118	34,938
Honduras	29	124,726	151,567	217,080	36,593
Hong Kong	14	264,226	312,171	474,283	390,862
India	43	827,119	1,006,490	1,445,690	1,067,651
Israel	69	1,399,264	1,839,393	2,560,653	968,339
Italy	84	1,060,733	1,326,436	1,929,116	768,351
Jamaica	4	6,876	7,720	11,311	5,683
Japan	862	18,103,218	12,188,314	30,537,010	4,765,735
Kuwait	27	325,950	419,986	596,488	295,166
Lebanon	2	9,000	10,140	16,470	15,400
Liberia	1,280	25,658,730	26,038,112	45,206,260	24,798,476
Malaysia	22	429,174	496,673	776,081	679,983
Maldive Island	1	9,711	11,720	17,771	14,271
Malta	54	1,099,668	1,452,968	1,827,456	1,071,535
Mauritius	1	17,324	20,159	31,703	.....
Mexico	102	1,978,062	2,380,363	3,284,686	1,367,884
Morocco	12	54,876	58,872	90,271	15,884
Netherlands-Antilles	2	5,590	7,012	10,230	9,150
Netherlands	241	2,548,320	2,693,972	4,561,469	1,625,864
New Zealand	3	3,527	2,907	5,149	.....
Nicaragua	3	5,282	6,713	9,666	3,424
Nigeria	4	19,496	22,284	35,678	15,101
Norway	155	2,803,628	2,832,575	5,019,010	2,817,134
Panama	2,500	42,517,138	43,070,417	74,795,878	32,134,394
People's Republic of China	163	3,222,820	3,906,749	5,810,647	3,776,578
Peru	134	1,461,157	1,613,401	2,601,181	1,588,248
Philippines	359	6,681,766	7,428,223	11,988,809	8,995,571
Poland	87	761,956	885,668	1,389,507	647,038
Portugal	6	99,446	129,066	184,587	174,970
Qatar	5	60,935	75,463	111,511	56,668
Samoa	3	27,597	31,650	50,503	21,383
Saudi Arabia	4	26,050	24,322	42,852	2,778
Seychelles	2	2,820	3,628	5,161	1,100
Sierra Leone	1	532	284	974	50
Singapore	266	5,667,014	5,648,124	9,989,802	4,669,150
Somali Republic	3	27,945	31,629	51,139	20,667
South Korea	191	4,400,523	4,783,952	7,802,819	3,555,462
Spain	51	280,459	275,960	506,399	232,862
Sri Lanka	41	522,780	645,647	928,243	361,843
St. Vincent & Grenadines	16	204,791	239,536	373,186	283,679
Sweden	53	1,999,912	1,425,139	3,640,228	416,556
Switzerland	9	230,667	280,774	410,585	364,166
Syria	2	7,000	8,450	11,515	5,172
Taiwan	173	4,611,429	5,511,318	8,418,427	3,936,842
Thailand	1	11,761	14,479	21,523	6,746
Toga	7	49,361	36,717	87,562	22,434
Turkey	21	286,505	349,127	497,934	355,684
Tuvaluan	1	703	1,043	1,026	.....
United Arab Emirates	1	12,263	15,122	22,441	2,979
United Kingdom	460	8,240,243	9,937,634	14,847,602	7,949,504
United States	636	6,664,145	6,216,562	11,383,438	3,880,966

Table 3.—Canal Traffic[1] by Flag of Vessel—Fiscal Year 1988—Continued

Flag	Number of transits	Measured tonnage: Panama Canal net	Measured tonnage: Registered gross[2]	Tolls	Long tons of cargo
U.S.S.R.	618	4,741,737	5,572,050	8,317,829	2,742,703
Vanuatu	61	321,928	306,891	587,410	310,750
Venezuela	111	485,895	534,219	868,373	355,665
West Germany	231	2,821,004	3,302,995	5,149,067	1,866,519
Yugoslavia	108	1,446,385	1,777,623	2,618,168	1,756,798
Total	12,234	191,478,087	199,619,367	$337,866,211	156,482,641

[1] Includes only commercial vessels of 300 net tons and over, Panama Canal measurement, or of 500 displacement tons and over on vessels paying tolls on displacement basis (dredges, warships, etc.).

[2] Includes 14 transits where no registered tonnage was reported.

NOTE.—In Canal traffic statistics, foreign naval vessels such as transports, supply ships, tankers, etc., with a measurement of 300 net tons (Panama Canal measurement) and over, and vessels of war, dredges, etc., with a displacement of 500 tons and over, are classified as oceangoing commercial vessels. Statistics on these vessels, except as related to displace-ment tonnage, have been included in the table above. As displacement tonnage cannot be combined with net tonnage, the following table shows statistics covering 25 vessels which transited the Canal during fiscal year 1988 and paid tolls on displacement tonnage.

Flag	Type	Number of transits	Displacement tonnage	Tolls
Argentina	Navy	1	3,700	$3,774
Brazil	Navy	1	3,450	3,519
Chile	Navy	1	4,750	4,845
Ecuador	Navy	4	10,359	10,566
France	Navy	4	15,854	16,171
France	Dredge	1	8,070	8,231
Mexico	Navy	2	3,306	3,372
Panama	Dredge	1	3,850	3,927
Peru	Navy	3	33,799	34,475
Portugal	Navy	2	2,550	2,601
Spain	Navy	1	3,700	3,774
Sweden	Navy	2	6,877	7,015
United Kingdom	Navy	2	6,334	6,461
Total		25	106,599	$108,731

Statistics compiled by Office of Executive Planning.

Table 4.—Classification of Canal Traffic[1] by Type of Vessel—Fiscal Year 1988

Type of Vessel	Laden			Ballast			Grand Total
	Atlantic to Pacific	Pacific to Atlantic	Total	Atlantic to Pacific	Pacific to Atlantic	Total	
CARGO AND CARGO/PASSENGER SHIPS:							
Bulk Carriers:							
Number of transits	1,802	1,652	3,454	464	208	672	4,126
Panama Canal net tonnage (thousands)	38,486	37,556	76,042	16,996	3,357	20,353	96,395
Tolls (thousands of dollars)	$70,428	$68,729	$139,157	$24,815	$4,902	$32,717	$171,874
Cargo (thousands of long tons)	55,738	32,747	88,485	.....	.....	.....	88,485
Container Cargo Ships:							
Number of transits	869	901	1,770	13	30	43	1,813
Panama Canal net tonnage (thousands)	17,091	19,081	36,173	206	235	441	36,614
Tolls (thousands of dollars)	$31,276	$34,919	$66,195	$301	$343	$644	$66,840
Cargo (thousands of long tons)	12,250	12,100	24,350	.....	.....	.....	24,350
General Cargo Ships:							
Number of transits	814	780	1,594	80	90	170	1,764
Panama Canal net tonnage (thousands)	6,425	6,531	12,956	632	387	1,018	13,975
Tolls (thousands of dollars)	$11,758	$11,952	$23,710	$922	$564	$1,487	$25,197
Cargo (thousands of long tons)	5,327	4,796	10,122	.....	.....	.....	10,122
Passenger Ships: [2]							
Number of transits	134	84	218	2	3	5	223
Panama Canal net tonnage (thousands)	2,500	1,415	3,915	2	49	51	3,966
Tolls (thousands of dollars)	$4,376	$2,589	$7,165	$3	$72	$75	$7,240
Cargo (thousands of long tons)	.....	.....	.....	.....	.....	.....	.....
Refrigerated Cargo Ships:							
Number of transits	602	1,102	1,704	526	38	564	2,268
Panama Canal net tonnage (thousands)	3,084	6,117	9,201	2,943	154	3,096	12,297
Tolls (thousands of dollars)	$5,643	$11,194	$16,837	$4,297	$224	$4,521	$21,338
Cargo (thousands of long tons)	687	3,097	3,784	.....	.....	.....	3,784
Tank Ships:							
Number of transits	707	420	1,127	185	326	511	1,638
Panama Canal net tonnage (thousands)	10,378	7,483	17,861	4,041	4,637	8,678	26,539
Tolls (thousands of dollars)	$18,991	$13,695	$32,686	$5,900	$6,770	$12,670	$48,356
Cargo (thousands of long tons)	10,409	12,491	28,960	.....	.....	.....	28,960

OTHER TYPE SHIPS:							
Naval Vessels:							
Number of transits	.....	.....	.....	10	13	23	23
Displacement tonnage (thousands)	.....	.....	.....	44	51	95	95
Tolls (thousands of dollars)	.....	.....	.....	$44	$52	$97	$97
Cargo (thousands of long tons)	.....	.....	.....	.....	.....	.....	.....
Barges, Dredges, Drydocks, Tugs, etc.:							
Number of transits	132	100	232	87	60	147	379
Panama Canal net tonnage (thousands)	660	503	1,163	298	359	557	1,719
Displacement tonnage (thousands)	.....	.....	.....	8	4	12	12
Tolls (thousands of dollars)	$1,205	$897	$2,102	$423	$382	$805	$2,907
Cargo (thousands of long tons)	507	274	781	.....	.....	.....	781
SUMMARY:							
Total Cargo and Cargo/Passenger Ships:							
Number of transits	4,928	4,939	9,867	1,270	695	1,965	11,832
Panama Canal net tonnage (thousands)	77,964	76,183	156,148	24,820	8,819	33,639	189,786
Tolls (thousands of dollars)	$142,671	$143,077	$285,750	$36,238	$12,875	$49,113	$334,863
Cargo (thousands of long tons)	90,471	65,231	155,702	.....	.....	.....	155,702
Total Other Type Ships:							
Number of transits	132	100	232	97	73	170	402
Panama Canal net tonnage (thousands)	660	503	1,163	298	259	557	1,719
Displacement tonnage (thousands)	.....	.....	.....	52	55	107	107
Tolls (thousands of dollars)	$1,205	$897	$2,102	$467	$434	$901	$3,003
Cargo (thousands of long tons)	507	274	781	.....	.....	.....	781
Grand Total Ships:							
Number of transits	5,060	5,039	10,099	1,367	768	2,135	12,234
Panama Canal net tonnage (thousands)	78,624	78,686	157,310	25,118	9,077	34,196	191,506
Displacement tonnage (thousands)	.....	.....	.....	52	55	107	107
Tolls (thousands of dollars)	$143,877	$143,974	$287,852	$36,705	$13,309	$50,015	$337,866
Cargo (thousands of long tons)	90,974	65,504	156,483	.....	.....	.....	156,483

[1] Includes only commercial vessels of 300 net tons and over (Panama Canal measurement) for vessels paying tolls on net tonnage basis, or of 500 displacement tons and over for vessels paying on displacement tonnage.

[2] Vessels certificated for more than 12 passengers.

Statistics compiled by Office of Executive Planning.

Table 5.—Laden and Ballast Traffic by Flag of Vessel
Fiscal Year 1988

Flag	Laden			Ballast		
	Number of transits	Panama Canal net tonnage	Tolls	Number of transits	Panama Canal net tonnage	Tolls
Antigua-Barbuda	6	17,163	$31,408	4	9,908	$14,466
Argentina	4	35,809	65,530	1	6,383	9,319
Austria	1	28,421	52,010	.....	.....	.....
Bahamas	240	3,265,875	5,976,551	55	494,039	721,297
Barbados	6	15,232	27,875	.....	.....	.....
Belgium	43	898,67[illegible]	1,644,487	7	77,716	113,465
Bermuda	5	61[illegible]	113,023	.....	.....	.....
Brazil	41	587[illegible]	075,839	1	13,097	19,122
Bulgaria	6	56,[illegible]	104,054	3	28,430	41,508
Burma	22	367,[illegible]	671,811	2	20,268	29,591
Canada	2	7,316	13,388	2	3,968	5,793
Cayman Islands	9	91,328	167,130	2	2,246	3,279
Chile	59	647,327	1,184,608	14	77,553	113,227
Colombia	143	1,331,496	2,436,638	17	91,106	133,015
Costa Rica	.....	.....	.....	2	5,880	8,585
Cuba	115	730,961	1,337,659	33	106,388	155,326
Cyprus	556	6,475,252	11,849,711	85	748,676	1,093,067
Czechoslovakia	1	11,716	21,440	.....	.....	.....
Denmark	182	4,371,277	7,999,436	19	196,600	287,036
Dominican Republic	1	8,454	15,471	1	8,454	12,343
East Germany	40	269,234	492,698	12	72,430	105,748
Ecuador	296	2,635,214	4,822,442	89	1,048,494	1,530,801
El Salvador	.....	.....	.....	2	2,286	3,338
Faroes	2	2,132	3,902	.....	.....	.....
Finland	2	18,395	33,663	1	11,556	16,872
France	52	1,066,500	1,951,695	2	29,046	42,407
Gibraltar	.....	.....	.....	1	361	527
Greece	572	8,950,773	16,379,915	113	1,816,172	2,651,611
Guatemala	7	24,528	44,886	2	7,008	10,232
Honduras	20	94,541	173,010	9	30,185	44,070
Hong Kong	12	239,224	437,780	2	25,002	36,503
India	72	643,504	1,177,612	11	183,615	268,078
Israel	69	1,399,264	2,560,653	.....	.....	.....
Italy	79	1,028,231	1,881,663	5	32,502	47,453
Jamaica	2	3,438	6,292	2	3,438	5,019
Japan	628	11,098,139	20,309,594	234	7,005,079	10,227,415
Kuwait	27	325,950	596,488	.....	.....	.....
Lebanon	2	9,000	16,470	.....	.....	.....
Liberia	1,077	21,055,294	38,504,924	203	4,603,436	6,701,336
Malaysia	21	404,020	739,357	1	25,154	36,725
Maldive Island	1	9,711	17,771	.....	.....	.....
Malta	32	599,841	1,097,709	22	499,827	729,747
Nauritius	1	17,324	31,703	.....	.....	.....
Mexico	55	1,063,089	1,945,453	45	914,973	1,335,861
Morocco	6	27,438	50,212	6	27,438	40,059
Netherland-Antilles	2	5,590	10,230	.....	.....	.....
Netherlands	200	2,272,760	4,159,151	41	275,560	402,318
New Zealand	.....	.....	.....	3	3,527	5,149
Nicaragua	3	5,282	9,666	.....	.....	.....
Nigeria	4	19,496	35,678	.....	.....	.....
Norway	133	2,501,928	4,578,528	22	301,700	440,482
Panama	2,049	34,370,079	62,897,244	450	8,147,059	11,894,706
People's Republic of China	153	2,987,379	5,466,904	10	235,441	343,744
Peru	112	1,171,396	2,143,655	19	289,761	423,051
Philippines	322	6,036,299	11,046,427	37	645,467	942,382
Poland	83	748,788	1,370,282	4	13,168	19,225
Portugal	4	99,446	181,986	.....	.....	.....
Qatar	5	60,935	111,511	.....	.....	.....
Samoa	3	27,597	50,503	.....	.....	.....
Saudi Arabia	2	13,025	23,836	2	13,025	19,016
Seychelles	2	2,820	5,161	.....	.....	.....
Sierra Leone	1	532	974	.....	.....	.....
Singapore	220	4,637,735	8,487,055	46	1,029,279	1,502,747
Somali Republic	3	27,945	51,139	.....	.....	.....
South Korea	171	3,724,474	6,815,788	20	676,049	987,032
Spain	44	251,769	460,737	6	28,690	41,887
Sri Lanka	33	445,904	816,004	8	76,876	112,239
St. Vincent & Granadines	15	200,517	366,946	1	4,274	6,240
Sweden	49	1,927,952	3,528,152	2	71,960	105,062
Switzerland	8	199,490	365,067	1	31,177	45,518
Syria	1	3,500	6,405	1	3,500	5,110
Taiwan	168	4,556,058	8,337,586	5	55,371	80,842
Thailand	1	11,761	21,523	.....	.....	.....
Toga	6	41,878	76,637	1	7,483	10,925
Turkey	15	215,233	393,876	6	71,272	104,057
Tuvaluan	.....	.....	.....	1	703	1,026
United Arab Emirates	1	12,263	22,441	.....	.....	.....

Table 5.—Laden and Ballast Traffic by Flag of Vessel Fiscal Year 1988—Continued

Flag	Laden			Ballast		
	Number of transits	Panama Canal net tonnage	Tolls	Number of transits	Panama Canal net tonnage	Tolls
United Kingdom	402	7,595,639	13,900,019	56	644,604	941,122
United States	448	4,469,693	8,179,538	188	2,194,452	3,203,900
U.S.S.R.	488	3,769,982	6,899,067	130	971,755	1,418,762
Vanuatu	56	317,284	580,630	5	4,644	6,780
Venezuela	88	429,638	786,238	23	56,257	82,135
West Germany	224	2,784,868	5,096,308	7	36,136	52,759
Yugoslavia	103	1,368,773	2,504,855	5	77,612	113,314
Total	10,099	157,310,367	$287,851,708	2,110	34,195,516	$49,905,773

Above table involves only commercial vessels of 300 net tons or over, Panama Canal measurement.
Statistics compiled by Office of Executive Planning.

Table 6.—Segregation of Transits[1] by Registered Gross Tonnage—Fiscal Year 1988

	Under 2,000	*2,000 to 3,999*	*4,000 to 5,999*	*6,000 to 7,999*	*8,000 to 9,999*	*10,000 to 14,999*	*15,000 to 19,999*	*20,000 to 29,999*	*30,000 to 39,999*	*40,000 to over*	*Total*[2]	*Registered gross tonnage*	*Average gross tonnage per vessel*
Antigua-Barbuda	3	3	2	2	.....	.....	.....	.....	.....	.....	10	34,376	3,438
Argentina	.....	.....	.....	.....	4	1	.....	.....	.....	.....	5	51,073	10,215
Austria	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1	31,701	31,701
Bahamas	15	26	7	11	44	48	40	99	5	.....	295	4,445,618	15,070
Barbados	.....	5	1	.....	.....	.....	.....	.....	.....	.....	6	21,426	3,571
Belgium	.....	.....	.....	15	.....	.....	.....	23	12	.....	50	1,126,210	22,524
Bermuda	.....	.....	.....	2	.....	2	.....	.....	1	.....	5	77,195	15,439
Brazil	.....	.....	.....	6	2	23	1	2	1	7	42	720,576	17,157
Bulgaria	.....	.....	.....	.....	.....	9	.....	.....	.....	.....	9	105,750	11,750
Burma	.....	.....	.....	.....	3	8	7	.....	6	.....	24	468,238	19,510
Canada	1	3	.....	.....	.....	.....	.....	.....	.....	.....	4	6,872	1,718
Cayman Islands	5	.....	4	.....	.....	.....	.....	2	.....	.....	11	71,852	6,532
Chile	8	2	.....	.....	18	43	.....	1	1	.....	73	795,107	10,988
Colombia	33	21	14	.....	1	87	4	.....	.....	.....	160	1,330,437	8,315
Costa Rica	1	1	.....	.....	.....	.....	.....	.....	.....	.....	2	3,911	1,956
Cuba	2	74	.....	4	38	26	4	.....	.....	.....	148	972,990	6,574
Cyprus	63	12	18	105	86	123	132	55	45	2	641	8,341,176	13,013
Czechoslovakia	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	1	13,569	13,569
Denmark	30	6	.....	.....	.....	21	9	34	.....	101	201	5,674,786	28,233
Dominican Republic	.....	.....	.....	.....	2	.....	.....	.....	.....	.....	2	19,260	9,630
East Germany	.....	.....	17	14	20	.....	2	.....	.....	.....	52	397,329	7,641
Ecuador	6	15	26	151	53	21	64	49	.....	.....	385	4,231,334	10,990
El Salvador	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	2,292	1,146
Faroes	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	2,262	1,131
Finland	.....	.....	.....	.....	1	2	.....	.....	.....	.....	3	37,159	12,386
France	3	4	.....	1	.....	16	15	14	1	.....	54	892,441	16,527
Gibraltar	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	542	542
Greece	38	1	15	6	76	217	104	84	143	1	685	12,325,445	17,993
Guatemala	.....	.....	9	.....	.....	.....	.....	.....	.....	.....	9	37,161	4,129
Honduras	9	2	.....	5	13	.....	.....	.....	.....	.....	29	151,567	5,226
Hong Kong	.....	.....	.....	.....	.....	3	2	6	3	.....	14	312,121	22,294
India	.....	.....	5	.....	2	2	13	9	5	7	43	1,006,490	23,407
Israel	.....	.....	.....	.....	.....	.....	.....	69	.....	.....	69	1,839,393	26,658
Italy	.....	.....	9	.....	16	16	17	24	2	.....	84	1,326,436	15,791
Jamaica	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	4	7,720	1,930
Japan	165	25	67	134	46	34	126	160	67	38	862	12,188,314	14,140
Kuwait	.....	.....	.....	.....	.....	.....	27	.....	.....	.....	27	419,986	15,555
Lebanon	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	2	10,140	5,070
Liberia	6	13	3	69	105	242	311	252	218	61	1,280	26,038,112	20,342
Malaysia	.....	.....	.....	.....	2	1	7	4	8	.....	22	496,673	22,576
Maldive Island	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	1	11,720	11,720
Malta	.....	3	3	3	2	3	8	.....	32	.....	54	1,452,968	26,907

Mauritius								1			1	20,159	20,159
Mexico	4	4	9	1		8	10	8	54		98	2,377,263	24,258
Morocco		6		6							12	58,872	4,906
Netherland-Antilles		2									2	7,012	3,506
Netherlands	10	41	31	15	32	62	5	36	9		261	2,693,972	11,178
New Zealand	3										3	2,907	969
Nicaragua	2		1								3	6,713	2,238
Nigeria			4								4	22,284	5,571
Norway	1		8	13	24	10	44	34	21		155	2,832,575	18,275
Panama	126	218	207	146	199	455	265	398	287	198	2,499	43,067,441	17,234
People's Republic of China					1	10	32	91	29		163	3,906,749	23,968
Peru		33	11		8	31	35		11		129	1,613,401	12,507
Philippines	8	12	17	8	20	47	75	86	86		359	7,428,223	20,691
Poland	5	7	7	10	31	19	1		7		87	885,668	10,180
Portugal								2	1	1	4	129,066	32,266
Qatar							5				5	75,463	15,093
Samoa						3					3	31,650	10,550
Saudi Arabia				4							4	24,322	6,080
Seychelles	2										2	3,628	1,410
Sierra Leone	1										1	284	284
Singapore	1		2		33	79	14	75	50	12	266	5,648,124	21,234
Somali Republic						3					3	31,629	10,543
South Korea	12	3				16	33	68	40	19	191	4,783,952	25,047
Spain	12	10	17	2	5			4			50	275,960	5,519
Sri Lanka					19	8		14			41	645,647	15,747
St. Vincent & Granadines	1		3	1			6	5			16	239,536	14,971
Sweden						1	22	7	11	10	51	1,425,139	27,944
Switzerland							1	2	6		9	280,774	31,197
Syria			2								2	8,450	4,225
Taiwan	13	2	1	2		1		60	60	35	173	5,511,318	31,857
Thailand						1					1	14,479	14,479
Toga			6	1							7	36,717	5,245
Turkey			2	6		4	4	1	3	1	21	349,127	16,625
Tuvaluan	1										1	1,043	1,043
United Arab Emirates							1				1	15,122	15,122
United Kingdom	16	6	20	38	12	58	69	124	80	35	458	9,937,011	21,697
United States	266	12	7	21	12	161	63	45	22	17	626	6,216,562	9,915
U.S.S.R.	15	42	84	136	108	154	62	13	4		618	5,572,050	9,016
Vanuatu	40		2	4	2	7		6			61	308,891	5,064
Venezuela	63	7		8	7	19	7				111	534,219	4,813
West Germany		37	7	1	35	25	88	23	13		231	3,302,995	14,299
Yugoslavia			1	1	23	39	31	3	9	1	108	1,777,623	16,459
Total	999	658	651	952	1,105	2,171	1,766	1,993	1,354	546	12,195	199,603,748	16,368
Percent of Total	8.2	5.4	5.3	7.8	9.1	17.8	14.5	16.3	11.1	4.5	100.0		

[1] Includes only commercial vessels of 300 net tons and over, Panama Canal measurement.

[2] Excludes 25 vessels paying tolls on displacement tonnage basis and 14 transit where no registered tonnage was reported.

Statistics compiled by Office of Executive Planning.

Table 7.—Principal Commodities Shipped Through Canal by Fiscal Years

[Thousands of long tons]

South Atlantic to Pacific			Commodity	North Pacific to Atlantic		
1986	1987	1988		1988	1987	1986
589	697	846	Canned and Refrigerated Foods	4,021	3,513	3,241
112	87	88	Canned Foods	122	89	126
3	2	2	Fish	22	20	28
24	5	4	Fruit	18	18	31
72	72	72	Milk	64	43	50
13	7	11	Other and unclassified	18	8	18
477	610	757	Refrigerated Foods	3,899	3,424	3,114
9	17	16	Bananas	1,163	965	1,001
11	8	8	Dairy Products	28	30	38
141	131	179	Fish	774	795	691
69	123	158	Fruit, excluding bananas	1,015	827	667
11	13	23	Meat	112	62	35
236	317	372	Other and unclassified	807	745	682
3,723	4,862	5,522	Chemicals and Petroleum Chemicals	1,292	980	922
786	893	976	Caustic Soda	5	4	.....
2,236	3,115	2,941	Chemicals, unclassified	1,167	897	855
700	854	1,606	Petroleum Chemicals, miscellaneous	120	78	68
7,534	5,902	5,390	Coal and Coke (excluding petroleum coke)	3,186	2,020	2,672
20,417	29,936	32,756	Grains	3,109	2,432	2,521
115	127	124	Barley	203	592	579
8,622	15,883	16,165	Corn	2	.....	23
32	8	6	Oats	1	38	1
28	76	98	Rice	365	344	345
2,253	2,624	2,163	Sorghum	.....	.....	25
6,830	7,758	6,871	Soybeans	42	31	8
2,378	3,166	6,997	Wheat	2,445	1,356	1,464
160	294	332	Other and unclassified	52	71	75
763	928	1,671	Lumber and Products	7,863	7,782	6,156
9	24	61	Boards and planks	4,703	4,128	3,406
28	30	27	Plywood, veneers, composition board	847	1,023	787
715	853	1,129	Pulpwood	1,850	1,795	1,649
11	20	453	Other and unclassified	463	835	314
555	540	531	Machinery and Equipment	2,125	2,387	2,352

43	47	46	Agricultural machinery and implements	28	18	17
342	342	322	Automobiles, trucks, accessories and parts	1,899	2,120	2,083
99	66	73	Construction machinery and equipment	139	156	147
28	24	47	Electrical machinery and apparatus	17	24	23
3	2	1	Motorcycles, bicycles and parts	7	6	8
40	59	42	Other and unclassified	35	63	74
2,538	3,346	2,736	Manufactures of Iron and Steel	4,107	3,626	4,162
240	203	137	Angles, shapes, and sections	296	301	226
12	3	8	Nails, tacks, and spikes	99	50	60
1,162	2,005	1,379	Plates, sheets, and coils	1,406	1,495	1,706
148	91	144	Tubes, pipes, and fittings	461	248	713
570	643	677	Wire, bars, and rods	245	291	368
406	401	392	Other and unclassified	1,600	1,241	1,089
235	261	144	Minerals, miscellaneous	4,977	4,851	4,590
22	16	17	Asbestos	4	3	5
1	3	1	Borax	431	379	400
3	.....	1	Infusorial earth	1	22	1
101	118	41	Salt	800	1,110	748
84	115	75	Soda and sodium compounds	158	112	70
24	8	9	Sulfur	3,583	3,226	3,365
7,572	9,888	10,289	Nitrates, Phosphates, and Potash	1,848	2,114	2,376
695	781	521	Ammonium compounds	23	16	11
1	2	11	Fishmeal	1,080	1,296	1,408
22	27	52	Nitrate of soda	328	265	245
4,925	6,269	6,725	Phosphates	233	242	338
213	347	280	Potash	20	81	140
1,716	2,462	2,700	Fertilizers, unclassified	163	213	234
4,367	3,569	3,462	Ores and Metals	6,872	5,412	5,420
600	717	736	Ores	5,735	4,195	4,065
101	114	178	Alumina/bauxite	1,382	732	884
7	7	7	Chrome	25	22	31
40	35	39	Copper	857	725	661
56	61	133	Iron	764	526	184
5	.....	2	Lead	209	189	148
46	35	71	Manganese	195	190	192
.....	.....	.....	Tin	9	15	30
68	104	42	Zinc	659	1,657	566
278	361	264	Other and unclassified	1,634	1,139	1,369

Table 7.—Principal Commodities Shipped Through Canal by Fiscal Years—Continued

[Thousands of long tons]

South Atlantic to Pacific			Commodity	North Pacific to Atlantic		
1985	1986	1987		1987	1986	1985
3,768	2,852	2,726	Metals	1,137	1,216	1,357
212	365	415	Aluminum	38	51	91
10	15	14	Copper	773	827	911
217	30	105	Iron	4	25	42
5	3	7	Lead	61	50	81
3,225	2,390	2,121	Scrap	10	23	1
21	14	13	Tin, including tinplate	10	11	19
46	14	15	Zinc	168	150	173
31	19	36	Other and unclassified	72	79	40
1,395	1,514	2,422	Other Agricultural Commodities	2,998	3,346	3,346
4	30	45	Beans, edible	84	49	90
2	2	32	Cocoa and cacao beans	46	42	56
10	13	19	Coffee, raw and processed	292	355	381
.....	2	.....	Copra and coconuts	6	8	9
18	9	25	Cotton, raw	87	77	121
4	7	11	Molasses	578	656	582
51	49	72	Oilseeds	111	238	61
2	.....	1	Peas, dry	89	44	24
3	3	4	Rubber, raw	116	48	70
2	1	.....	Skins and hides	1	.....	1
1,299	1,399	2,213	Sugar	1,581	1,825	1,941
1	1	1	Wool, raw	9	3	10
11,931	13,093	11,851	Petroleum and Products	12,740	12,840	18,918
46	139	52	Asphalt	.....	2	8
2,933	3,393	2,820	Crude oil	5,967	5,566	10,003
1,119	1,171	1,416	Diesel oil	467	199	995
2,088	1,784	1,557	Fuel oil, residual	3,371	4,118	4,332
2,206	2,428	2,009	Gasoline	252	257	574
565	1,001	1,007	Jet fuel	39	32	51
86	98	59	Kerosene	.....	6	14
1,072	1,123	1,092	Liquified gas	14	151	71
468	597	656	Lubricating oil	221	253	275
1,203	1,147	1,098	Petroleum coke	2,338	2,103	2,445

145	213	85	Other and unclassified	71	153	150
11,056	12,470	13,358	Miscellaneous	10,367	10,381	10,591
29	15	17	Bricks and tile	4	7	7
22	6	39	Carbon black	1	84	1
193	249	150	Cement	1	3	23
357	440	472	Clay, fire and china	25	27	15
4	11	8	Fibers, plant	5	7	25
149	191	185	Flour, wheat	36	1	1
28	18	17	Glass and glassware	6	5	6
23	37	30	Groceries, miscellaneous	53	46	44
25	12	9	Liquors and wines	9	27	25
27	21	63	Marble and stone	10	2	1
4	5	4	Oil, coconut	50	38	52
.....	.....	2	Oil, fish	140	125	208
197	167	155	Oil, vegetable	125	114	164
765	964	911	Paper and paper products	458	409	421
3	2	2	Porcelainware	8	3	1
203	166	105	Resin	3	2	9
20	16	16	Rubber, manufactured	13	14	15
1	.....	1	Seeds, excluding oilseeds	21	33	62
31	15	11	Slag, clinkers, and dross	11	.....	7
93	77	80	Tallow	21	23	42
28	24	15	Textiles	22	38	33
1	3	1	Tobacco and manufactures	1	2	2
5	7	7	Wax, paraffin	75	7	5
8,849	10,004	11,058	All other and unclassified	9,267	9,364	9,421
72,675	87,006	90,978	Total	65,504	61,684	67,270

Statistics compiled by Office of Executive Planning.

Table 8.—Origin and Destination of Commercial Cargo Through the Panama Canal From Atlantic to Pacific During Fiscal Year 1988 Segregated by Countries in Principal Trade Routes

[Long tons]

	To West Coast United States				To W. C. Canada	To West Coast Central America								
	Alaska	Hawaii	Main-land	Total	Canada	Costa Rica	El Sal-vador	Guate-mala	Mexico	Nica-ragua	Pan-ama	Central America (other)[1]	Balboa, R.P.[2]	Total
EAST COAST NORTH AMERICA:														
United States:														
North Atlantic ports	44	.....	61,227	61,271	24	11,466	92,637	20,667	42,622	.....	.....	5,514	6,814	179,720
South Atlantic ports	.....	.....	607	607	.....	1,976	2,756	.....	423	.....	23,787	.....	10,163	39,105
Great Lakes ports	.....	.....	.....	.....	.....	.....	1,847	.....	27,069	.....	.....	.....	.....	28,916
Gulf ports	.....	6,012	942,957	948,969	199,931	361,348	356,857	117,002	941,480	.....	23,951	6,030	256,352	2,063,020
United States (other)[1]	.....	.....	6,461	6,461	.....	.....	15,692	.....	1,929	995	.....	.....	40,045	58,661
Total United States	44	6,012	1,011,252	1,017,308	199,955	374,790	469,789	137,669	1,013,523	995	47,738	11,544	313,374	2,369,422
EAST COAST CANADA:	.....	.....	17,378	17,378	12	807	101	.....	.....	6,300	2,731	7,175	.....	17,114
EAST COAST CENTRAL AMERICA:														
Mexico	.....	.....	53,145	53,145	.....	343	353,591	217,473	1,771,351	2,250	.....	.....	477	2,345,485
Panama	.....	.....	.....	.....	.....	.....	5,746	.....	.....	2,107	.....	.....	176,339	184,192
Central America (other)[1]	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2,761	.....	.....	2,761
Cristobal, R.P.[2]	.....	.....	382	382	.....	25	77	.....	.....	539	.....	6,754	.....	7,395
Total Central America	.....	.....	53,527	53,527	.....	368	359,414	217,473	1,771,351	4,896	2,761	6,754	176,816	2,539,833
EAST COAST SOUTH AMERICA:														
Brazil	.....	.....	776,794	776,794	49,476	616	2,036	.....	53,120	.....	.....	207	1,968	57,947
Colombia	.....	.....	138	138	.....	.....	430	51,614	146,520	663	809	165	1,604	201,805
Venezuela	.....	19,139	371,136	390,275	13,296	53,464	346,554	382,787	.....	36,560	2,455	113,386	8,423	943,629
South America (other)[1]	.....	.....	77,105	77,105	24,461	.....	1,831	.....	.....	9,842	962	114	.....	12,749
Total South America	.....	19,139	1,225,173	1,244,312	87,233	54,080	350,851	434,401	199,640	47,065	4,226	113,872	11,995	1,216,130
WEST INDIES:														
Cuba	.....	.....	.....	.....	.....	12,659	.....	.....	.....	91,153	.....	19,229	18	123,059
Jamaica	.....	.....	2,535	2,535	89,532	.....	4,542	.....	.....	.....	2,837	.....	3,519	10,898
Netherlands West Indies	.....	.....	27,517	27,517	.....	.....	3,252	902	.....	3,231	.....	17,654	24,437	49,476
Trinidad/Tobago	.....	.....	1,010	1,010	28,133	33,041	.....	.....	.....	27,096	12,711	.....	.....	72,848
West Indies (other)[1]	.....	.....	110,784	110,784	13	.....	10,668	.....	2,825	31,237	481	.....	1,717	46,928
Total West Indies	.....	.....	141,846	141,846	117,678	45,700	18,462	902	2,825	152,717	16,029	36,883	29,691	303,209

EUROPE:														
Belgium	.....	.....	326,024	326,024	32,309	11,792	48,137	24,538	1,578	22,613	.....	24,122	.....	132,780
France	.....	.....	436,657	436,657	33,346	9	2,960	.....	10,416	4,361	.....	20	7,907	25,673
Italy	.....	.....	298,439	298,439	22,083	.....	1,903	5	830	30,922	.....	650	1,289	35,599
Netherlands	.....	.....	634,526	634,526	54,778	7,677	16,781	21,652	3,310	3,258	.....	2,810	7,494	62,982
Norway	.....	.....	142,362	142,362	3,040	.....	14,812	9,994	.....	24,316	.....	.....	.....	49,122
Spain-Portugal	.....	.....	195,575	195,575	169,955	.....	2,300	20	45	3,127	.....	1,693	.....	7,185
Sweden	.....	.....	134,847	134,847	3,294	.....	413	.....	757	5,705	.....	.....	.....	6,875
United Kingdom	.....	.....	90,216	90,216	37,276	2	1,936	.....	52,438	1,594	.....	344	.....	56,314
U.S.S.R.	22	1,316	24,971	26,309	16	.....	2,669	.....	9	763,335	.....	10,195	.....	776,208
West Germany	.....	233	392,037	392,270	53,257	1,938	7,131	101	20,679	4,802	2,498	6,590	.....	43,739
Europe (other)[1]	15,895	.....	771,537	787,432	173,623	4,703	20,878	88,135	36	132,900	12,023	48,558	.....	307,233
Total Europe	15,917	1,549	3,447,191	3,464,657	582,971	26,121	119,920	144,445	90,098	996,933	14,521	94,982	16,690	1,503,710
ASIA (MIDDLE EAST)	.....	.....	168,627	168,627	.....	34	.....	923	47,500	11,196	.....	.....	.....	59,653
AFRICA	.....	.....	50,823	50,823	788,719	.....	689	.....	191,110	18,203	.....	2,356	.....	212,358
GRAND TOTAL	54,961	26,700	6,115,817	6,158,478	1,776,568	501,900	1,319,226	935,813	3,316,047	1,238,305	88,006	273,566	548,566	8,221,429
Percent of Pacific-bound cargo	0.0	0.0	6.7	6.8	2.0	0.6	1.5	1.0	3.6	1.4	0.1	0.3	0.6	9.0

Table 8.—Origin and Destination of Commercial Cargo Through the Panama Canal From Atlantic to Pacific During Fiscal Year 1988 Segregated by Countries in Principal Trade Routes—Continued

[Long tons]

	To West Coast South America						To Oceania				
	Chile	Colombia	Ecuador	Peru	South America (other)[1]	Total	Australia	French Oceania	New Zealand	Oceania (other)[1]	Total
EAST COAST NORTH AMERICA:											
United States:											
North Atlantic ports	133,824	20,060	29,251	50,799	6,900	240,834	127,553	677	38,205	60,561	226,996
South Atlantic ports	33,365	54,930	127,620	128,486	16,384	360,785	[2]1,875	584	88,612	45,237	216,308
Great Lakes ports	5,366	.....	950	19,159	.....	25,475	.....	.....	.....	.....	.....
Gulf ports	1,018,978	620,887	852,600	1,658,245	82,483	4,233,193	1,345,312	.....	161,885	116,893	1,624,090
United States (other)[1]	85,902	22,788	55,245	35,203	19,648	218,786	52,077	174	65,331	46,073	163,655
Total United States	1,277,435	718,665	1,065,666	1,891,892	125,415	5,079,073	1,606,817	1,435	354,033	268,764	2,231,049
EAST COAST CANADA:	3,949	37,237	13,197	31,289	5,825	91,497	82,541	36	35,807	46,115	164,499
EAST COAST CENTRAL AMERICA:											
Mexico	12,812	44,224	120,049	33,260	3,651	213,996	2,938	.....	9,926	.....	12,864
Panama	8,383	38	7,425	1,838	3,409	21,093	.....	.....	.....	.....	.....
Central America (other)[1]	419	1,204	3,834	.....	.....	5,457	.....	.....	.....	.....	.....
Cristobal, R.P.[3]	6,816	.....	3,578	289	.....	10,683	.....	.....	.....	.....	.....
Total Central America	28,430	45,466	134,886	35,387	7,060	251,229	2,938	.....	9,926	.....	12,864
EAST COAST SOUTH AMERICA:											
Brazil	413	33,899	93,582	51,430	.....	179,324	16	.....	.....	.....	16
Colombia	34,682	299,441	2,397	163,335	9,212	509,067	.....	.....	.....	.....	.....
Venezuela	1,089,449	55,130	72,448	131,564	50,141	1,398,732	5	.....	.....	.....	5
South America (other)[1]	3,862	.....	3,746	10,751	1,634	19,993	2,770	6	.....	.....	2,776
Total South America	1,128,406	388,470	172,173	357,080	60,987	2,107,116	2,791	6	.....	.....	2,797
WEST INDIES:											
Cuba	.....	.....	.....	.....	10,183	10,183	.....	.....	.....	.....	.....
Jamaica	4,022	.....	.....	.....	.....	4,022	102	.....	10	123	235
Netherlands West Indies	178,185	32,690	3,996	3,503	116,627	335,001	.....	.....	32,224	60	32,284
Trinidad/Tobago	28,696	52,577	4,664	.....	.....	85,937	87	.....	2,184	1,444	3,715
West Indies (other)[1]	342	17,402	.....	14,091	99	31,934	127	.....	47	903	1,077
Total West Indies	211,245	102,669	8,660	17,594	126,909	467,077	316	.....	34,465	2,530	37,311

EUROPE:											
Belgium	155,320	12,064	47,916	241,085	22,020	478,405	6,819	30,359	46,080	22,995	106,253
France	6,763	732	6,727	58,640	1,460	74,322	8,797	169,709	12,723	32,239	223,468
Italy	17,004	32,631	17,558	10,379	7,568	85,140	538	8,770	3,096	939	13,343
Netherlands	20,195	32,777	7,725	40,721	3,072	104,490	54,748	22,733	23,638	45,132	146,251
Norway	540	.....	.....	.....	.....	540	7,431	.....	.....	.....	7,431
Spain-Portugal	38,140	5,643	51,864	19,890	21,329	136,866	4	1,778	1,165	232	3,179
Sweden	27,274	8,772	2,582	21,881	1,298	61,807	20,670	.....	2,301	36,029	59,000
United Kingdom	38,704	11,161	14,026	18,077	858	82,826	43,208	4,234	39,291	45,081	131,814
U.S.S.R.	.....	36,152	10,375	396	105,126	152,049	.....	.....	.....	.....	.....
West Germany	104,403	7,574	36,938	49,919	7,266	206,100	26,687	15,924	14,968	57,055	114,634
Europe (other)[1]	110,948	7,277	181,865	98,949	48,310	447,349	45,321	39,376	16,694	120,629	222,020
Total Europe	519,291	154,783	377,576	559,937	218,307	1,829,894	214,223	292,883	159,956	360,331	1,027,393
ASIA (MIDDLE EAST):	2,718	80,376	25,149	1,946	.....	110,189	.....	.....	.....	.....	.....
AFRICA:	3,573	15,389	29,072	10,260	1,241	59,535	9,528	.....	91,724	.....	101,252
GRAND TOTAL	3,175,047	1,543,055	1,826,379	2,905,385	545,744	9,995,610	1,919,154	294,360	685,911	677,740	3,577,165
Percent of Pacific-bound cargo	3.5	1.7	2.0	3.2	0.6	11.0	2.1	0.3	0.8	0.7	3.9

Table 8.—Origin and Destination of Commercial Cargo Through the Panama Canal From Atlantic to Pacific During Fiscal Year 1988 Segregated by Countries in Principal Trade Routes—Continued

[Long tons]

	To Asia													
	China	*Taiwan*	*Hong Kong*	*Indonesia*	*Japan*	*Philippine Islands*	*Singapore*	*South Korea*	*Thailand*	*U.S.S.R.*	*Asia (other)*[1]	*Total*	*Grand total*	*Percent of total Pacific-bound cargo*
EAST COAST NORTH AMERICA:														
United States:														
North Atlantic ports	117,614	1,022,111	229,400	768	2,476,171	33,582	145,301	1,734,497	.....	.....	455,554	6,214,998	6,923,843	7.6
South Atlantic ports	426,427	538,018	280,332	22,372	1,292,203	18,566	95,662	308,837	53	.....	348,477	3,330,947	3,947,752	4.3
Great Lakes ports	2,754	3,793	.....	.....	22,596	.....	.....	77,881	32,987	.....	.....	140,011	194,402	0.2
Gulf ports	7,291,575	5,697,178	126,091	143,201	22,876,789	343,716	207,088	4,618,875	58,289	87,994	1,352,144	42,802,940	51,872,143	57.0
United States (other)[2]	289,075	438,438	173,592	.....	738,969	25,402	68,259	296,092	2,784	.....	306,223	2,338,834	2,786,397	3.1
Total United States	8,127,445	7,699,538	809,415	166,341	27,406,728	421,266	516,310	7,036,182	94,113	87,994	2,462,398	54,827,730	65,724,537	72.2
EAST COAST CANADA:	382,476	61,957	27,168	.....	439,899	7,428	4,344	291,904	51,919	.....	196,229	1,463,324	1,753,824	1.9
EAST COAST CENTRAL AMERICA:														
Mexico	103,497	47,580	11,332	81	111,442	22	16,273	11,246	35,625	38,906	38,566	414,570	3,040,060	3.3
Panama	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	205,285	0.2
Central America (other)[1]	.....	111	3,771	.....	4,644	.....	.....	14,668	.....	.....	3,912	27,106	35,324	0.0
Cristobal, R.P.[2]	.....	1,459	0	.....	2,956	.....	5	201	7	.....	493	5,130	23,590	0.0
Total Central America	103,497	49,150	15,112	81	119,042	22	16,278	26,115	35,632	38,906	42,971	446,806	3,304,259	3.6
EAST COAST SOUTH AMERICA:														
Brazil	27,072	4,404	11,428	.....	403,582	.....	1,868	5,403	.....	11,417	22,054	487,228	1,550,785	1.7
Colombia	7,146	.....	.....	.....	279,603	.....	.....	.....	.....	.....	833	287,582	998,592	1.1
Venezuela	37,925	18,840	3,755	.....	292,758	.....	.....	5,038	15,456	.....	53,731	427,503	3,173,440	3.5
South America (other)[1]	71	3,386	2,147	.....	48,918	.....	347	3,347	.....	.....	9,080	67,296	204,380	0.2
Total South America	72,214	26,630	17,330	.....	1,024,861	.....	2,215	13,788	15,456	11,417	85,698	1,269,609	5,927,197	6.5
WEST INDIES:														
Cuba	1,307,693	.....	.....	.....	328,861	.....	.....	.....	.....	123,798	95,490	1,855,842	1,989,084	2.2
Jamaica	.....	30,471	23,167	.....	33,543	46	3,491	21,001	.....	.....	54,584	166,303	273,525	0.3
Netherlands West Indies	.....	3,740	5,021	.....	15,994	.....	1,957	5,508	.....	.....	8,778	40,998	485,276	0.5
Trinidad/Tobago	64,541	74,270	6	.....	113,387	.....	.....	3,154	.....	.....	17,482	272,840	464,483	0.5
West Indies (other)[1]	563	12,392	1,153	5,122	77,582	51,263	20	16,097	.....	126	12,660	176,978	367,714	0.4
Total West Indies	1,372,797	120,873	29,347	5,122	569,367	51,309	5,468	45,760	.....	123,924	188,994	2,512,961	3,580,082	3.9

EUROPE:														
Belgium	940	4,676	.....	.....	5,557	270	717	62	.....	.....	3,013	15,235	1,091,006	1.2
France	670	135	29	52	3,917	.....	.....	177	.....	.....	3,105	8,085	801,551	0.9
Italy	1,309	1,764	774	.....	2,456	.....	.....	100	.....	.....	2,680	9,083	463,687	0.5
Netherlands	2,752	70,292	2,012	3,864	64,994	646	1,431	24,773	2,432	.....	48,266	221,462	1,224,489	1.3
Norway	.....	.....	.....	.....	12,674	.....	.....	.....	.....	.....	9,179	21,853	224,348	0.2
Spain-Portugal	6,652	1,469	863	.....	25,866	.....	.....	11,143	.....	.....	24,560	70,553	583,313	0.6
Sweden	4	.....	.....	.....	16,154	.....	24	.....	.....	.....	10,108	26,290	292,113	0.3
United Kingdom	.....	2,749	1,447	5,400	47,908	1,481	495	2,091	.....	.....	10,345	71,916	470,356	0.5
U.S.S.R.	.....	.....	.....	.....	.....	.....	20	.....	.....	557	.....	577	955,159	1.0
West Germany	.....	328	23	.....	44,424	.....	522	5,947	.....	.....	1,705	52,949	862,949	0.9
Europe (other)[1]	12,742	7,664	3,141	55	58,618	.....	6,689	11,979	.....	.....	49,205	150,093	2,087,750	2.3
Total Europe	25,069	89,077	8,289	9,371	282,568	2,397	9,898	56,272	2,432	557	162,166	648,096	9,056,721	10.0
ASIA (MIDDLE EAST)	.....	2,321	1,774	.....	1,021	.....	17	6,560	.....	.....	1,720	13,413	351,882	0.4
AFRICA	.....	4,519	8,216	.....	40,045	.....	3,665	2,483	.....	.....	8,218	67,146	1,279,833	1.4
GRAND TOTAL	10,083,498	8,054,065	916,651	180,915	29,883,531	482,422	558,195	7,479,064	199,552	262,798	3,148,394	61,249,085	90,978,335	.....
Percent of Pacific-bound cargo	11.1	8.9	1.0	0.2	32.8	0.5	0.6	8.2	0.2	0.3	3.5	67.3		100.0

[1] Includes cargo not routed to permit segregation between definite countries.
[2] Includes both local and transshipped cargo.

Statistics compiled by Office of Executive Planning.

Table 9.—Origin and Destination of Commercial Cargo Through the Panama Canal From Pacific to Atlantic During Fiscal Year 1988 Segregated by Countries in Principal Trade Routes

[Long tons]

	To East Coast United States						To W. C. Canada	To East Coast Central America				
	North Atlantic ports	South Atlantic ports	Great Lakes ports	Gulf ports	United States (other)[1]	Total	Canada	Mexico	Panama	Central America (other)[1]	Cristobal R.P.[2]	Total
WEST COAST NORTH AMERICA:												
United States:												
Alaska	46,363	.....	.....	286,732	.....	333,095	.....	.....	.....	.....	.....	.....
Hawaii	121,236	18	.....	135,208	.....	256,462	171	.....	.....	.....	.....	.....
Mainland	196,990	12,826	.....	267,440	61,356	538,612	191,142	88,106	3,384	938	23,362	115,790
Total United States	364,589	12,844	.....	689,380	61,356	1,128,169	191,313	88,106	3,384	938	23,362	115,790
WEST COAST CANADA	766,862	508,713	.....	618,045	415,364	2,308,984	.....	27,843	.....	14,271	3,000	45,114
WEST COAST CENTRAL AMERICA:												
Costa Rica	13,982	9,004	.....	23,007	19,482	65,475	2,908	1,502	.....	3,793	709	6,004
El Salvador	2,473	5,071	.....	16,339	22,527	46,410	.....	47	.....	.....	296	343
Guatemala	46,893	16,552	.....	122,496	27,531	213,472	1,062	.....	.....	.....	110	110
Honduras	.....	15,464	.....	8,281	.....	23,745	.....	.....	.....	.....	182	182
Mexico	317,048	51,690	.....	123,549	65,633	557,920	67,991	391,630	.....	6	963	392,599
Nicaragua	.....	.....	.....	.....	.....	.....	7,455	104	.....	12,464	372	12,940
Panama	53,086	22,871	.....	18,246	9,040	103,243	.....	.....	.....	.....	.....	.....
Central America (other)[1]	3,394	.....	.....	.....	3,841	7,235	.....	301	.....	273	1,116	1,690
Balboa, R.P.[2]	.....	.....	.....	1,580	116	1,696	.....	9,300	.....	600	752	10,652
Total Central America	436,876	120,652	.....	313,498	148,170	1,019,196	79,416	402,884	.....	17,136	4,500	424,520
WEST COAST SOUTH AMERICA:												
Chile	771,574	135,350	.....	595,495	125,376	1,627,795	49,553	7,216	.....	.....	15,712	22,928
Colombia	58,311	40,779	.....	63,442	19,700	182,232	350	322	.....	497	110	929
Ecuador	1,609,905	143,048	970	973,557	197,282	2,924,762	.....	1,983	254,862	68,556	194	325,595
Peru	1,519,909	175,536	.....	348,214	109,052	2,152,711	21,850	32,350	.....	.....	59	32,409
South America (other)[1]	43,607	17,486	9,496	26,613	45,898	143,100	.....	12,324	.....	3,005	207	15,536
Total South America	4,003,306	512,199	10,466	2,007,321	497,308	7,030,600	71,753	54,195	254,862	72,058	16,282	397,397

OCEANIA:												
Australia	986,144	99,875	43,266	1,539,961	117,584	2,786,830	366,831	110,567	133	.....	21	110,721
British Oceania	5,512	.....	.....	.....	.....	5,512	.....	.....	.....	.....	.....	.....
French Oceania	8,284	41	.....	3,837	3,881	16,043	3,838	.....	.....	.....	.....	.....
New Zealand	148,274	43,515	.....	225,263	12,394	429,446	35,413	27,987	182	5,490	295	33,954
Oceania (other)[1]	74,930	18,410	.....	9,076	56,037	158,453	38,307	.....	.....	.....	.....	.....
Total Oceania	1,223,144	161,841	43,266	1,778,137	189,896	3,396,284	444,389	138,554	315	5,490	316	144,675
ASIA:												
China	94,838	66,294	4,904	1,094,218	19,184	1,279,438	123,837	.....	.....	.....	.....	.....
Taiwan	730,604	324,123	.....	92,346	222,304	1,369,377	83,388	4,999	39	3,895	15,634	24,567
Hong Kong	323,732	140,994	.....	43,877	71,470	580,073	66,762	102	.....	762	22,579	23,443
Indonesia	124,617	36,569	.....	94,827	220,620	476,633	21,656	.....	.....	.....	.....	.....
Japan	3,097,711	1,059,307	174,331	2,436,905	766,828	7,535,082	93,364	4,214	377	1,433	18,834	24,858
Philippine Islands	168,336	11,419	109	56,540	61,002	297,406	2,337	.....	.....	.....	16	16
Singapore	284,036	131,618	.....	135,707	61,169	612,530	52,101	.....	.....	129	3,951	4,080
South Korea	44,644	151,745	.....	342,144	184,154	1,119,687	43,527	10	201	503	12,959	13,673
Thailand	21,166	5,786	.....	24,790	33,947	85,689	.....	.....	.....	.....	.....	.....
U.S.S.R.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Asia (other)[1]	654,835	313,634	.....	184,113	243,440	1,396,022	63,596	1,150	.....	6,090	96,628	103,868
Total	5,941,519	2,241,489	179,344	4,505,467	1,884,118	14,751,937	550,568	10,475	617	12,812	170,601	194,505
GRAND TOTAL	12,736,296	3,557,738	233,076	9,911,848	3,196,212	29,635,170	1,337,439	722,057	259,178	122,705	218,061	1,322,001
Percent of Atlantic-bound cargo	19.4	5.4	0.4	15.1	4.9	45.2	2.0	1.1	0.4	0.2	0.3	2.0

See footnotes at end of table

Table 9.—Origin and Destination of Commercial Cargo Through the Panama Canal From Pacific to Atlantic During Fiscal Year 1988 Segregated by Countries in Principal Trade Routes—Continued

[Long tons]

	To East Coast South America					To West Indies							
	Brazil	Colombia	Venezuela	South America (other)[1]	Total	Cuba	Haiti/ Dominican Republic	Jamaica	Netherlands West Indies	Puerto Rico	Trinidad/ Tobago	West Indies (other)[1]	Total
WEST COAST NORTH AMERICA:													
United States:													
Alaska													
Hawaii													
Mainland	119,533	1,072	109,721	1,285	231,611		21,362	4,899	280,858	36,703		145,939	489,761
Total United States	119,533	1,072	109,721	1,285	231,611		21,362	4,899	280,858	36,703		145,939	489,761
WEST COAST CANADA	269,925	25,236	164,328	23,072	482,561	93,115		33,203		75,870			202,188
WEST COAST CENTRAL AMERICA:													
Costa Rica	954	2			956				3,197	314			3,511
El Salvador	1,122	23	295		1,440				11,894				11,894
Guatemala	683		17,655		18,338		17		4	5,904	29,526		35,451
Honduras		17			17						1,134	26,236	27,370
Mexico	12,155	33,546			45,701	4,921	123	1,818		7,203	62	111	14,238
Nicaragua	1,727	80			1,807	13,404	3						13,407
Panama		1,363			1,363	1,083				25,352			26,435
Central America (other)[1]	168	9,924	16,500	57	26,649	20,952				75,146			96,098
Balboa, R.P.[2]						50							50
Total Central America	16,809	44,955	34,450	57	96,271	40,410	143	1,818	15,095	113,919	30,722	26,347	228,454
WEST COAST SOUTH AMERICA:													
Chile	2,131	15,273	152,871		170,275		67,651			27,347		2,252	97,250
Colombia		105,668	695		106,363		43			46,120			46,163
Ecuador	3,335	1,516	19,994	4,647	29,492		28,102		1,686,806	1,656,816		27,348	3,399,072
Peru	10,303	7,113	80,324	10,528	108,268	10,559			53,727	259,298			323,584
South America (other)[1]	408	28,853	5,352		34,613	55,616			5,853	1,936			63,405
Total South America	16,177	158,423	259,236	15,175	449,011	66,175	95,796		1,746,386	1,991,517		29,600	3,929,474

OCEANIA:													
Australia			182,489		182,489	4,017		1,315	346	22,306	4,991	2,566	35,541
British Oceania										910			910
French Oceania										851		675	1,526
New Zealand		508	36,052		36,560		10,374	2,551	176		4,049	9,553	26,703
Oceania (other)[1]										17,975		130	18,105
Total Oceania		508	218,541		219,049	4,017	10,374	3,866	522	42,042	9,040	12,924	82,785
ASIA:													
China			49,903		49,903	215,914	39						215,953
Taiwan	1,169	412	3,998	40	5,619		4,646	51,688	928	6,124	2,030	6,094	71,504
Hong Kong	1,197	301	3,213		4,711		1,849	34,760	883	2,354	1,354	2,711	43,931
Indonesia										61,960			61,960
Japan	20,626	26,420	152,167	5,651	204,864	14,789	18,860	38,700	9,021	86,092	8,748	48,930	225,140
Philippine Islands								768					768
Singapore	545	143	8,080	2	8,770	450	76	3,623	152	1,215	57		5,573
South Korea	415	1,107	23,519	213	25,254	10,316	4,926	24,274	805	7,788	1,995	5,539	55,643
Thailand		16,978			16,978	49,351							49,351
U.S.S.R.						327,127							327,127
Asia (other)[1]	10,559	17,160	39,471	21,095	88,285	43,381	24,065	29,923	7,237	27,251	8,634	74,125	214,616
Total	34,511	62,521	280,351	27,001	404,384	661,328	54,455	183,756	19,026	192,784	22,818	137,399	1,271,566
GRAND TOTAL	456,955	292,715	1,066,627	66,590	1,882,887	865,045	182,130	227,542	2,061,887	2,452,835	62,580	352,209	6,204,228
Percent of Atlantic-bound cargo	0.7	0.4	1.6	0.1	2.9	1.3	0.3	0.3	3.1	3.7	0.1	0.5	9.5

See footnotes at end of table.

Table 9.—Origin and Destination of Commercial Cargo Through the Panama Canal From Pacific to Atlantic During Fiscal Year 1988 Segregated by Countries in Principal Trade Routes—Continued

[Long tons]

	To Europe													
	Belgium	*Denmark*	*Finland*	*France*	*Italy*	*Netherlands*	*Spain/Portugal*	*Sweden*	*United Kingdom*	*U.S.S.R.*	*Yugoslavia*	*West Germany*	*Europe (other)*[1]	*Total*
WEST COAST NORTH AMERICA:														
United States:														
Alaska	155,413	.....	.....	24,162	61,383	462	1,103	.....	550	.....	.....	20,281	138,177	401,531
Hawaii	.....	.....	.....	.....	.....	51,633	.....	.....	.....	.....	.....	.....	.....	51,633
Mainland	450,669	66,448	.....	159,329	163,251	2,000,516	444,189	178,530	186,803	14,607	1,257	189,126	1,274,812	5,129,537
Total United States	606,082	66,448	.....	183,491	224,634	2,052,611	445,292	178,530	187,353	14,607	1,257	209,407	1,412,989	5,582,701
WEST COAST CANADA	761,593	12,214	.....	318,113	279,214	857,605	304,305	100,622	1,734,747	8,523	5,202	281,533	1,277,090	5,938,761
WEST COAST CENTRAL AMERICA:														
Costa Rica	13	.....	.....	.....	413	2,949	900	.....	.....	25,255	.....	1,117	5,989	36,636
El Salvador	1,142	.....	491	372	22	2	425	.....	.....	40,602	.....	29,711	20,701	93,468
Guatemala	23,325	.....	.....	.....	7,804	19,682	292	.....	11,909	140,276	.....	5,807	38,460	247,555
Honduras	.....	.....	.....	.....	.....	.....	12,083	.....	.....	.....	.....	97	706	12,886
Mexico	8,144	.....	.....	5,577	18,445	39,675	111,253	2,353	4,629	.....	.....	72,033	70,527	332,636
Nicaragua	80,903	.....	.....	322	64	120	10,713	.....	1	17,631	.....	14,323	17,548	141,625
Panama	23,447	.....	.....	5,145	47,137	7,515	9,907	4,843	.....	.....	.....	53,382	14,924	166,300
Central America (other)[1]	330	.....	.....	440	3,982	2,033	609	.....	318	70	.....	16,942	7,904	32,628
Balboa, R.P.[2]	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total Central America	137,304	.....	491	11,856	77,867	71,976	146,182	7,196	16,857	223,834	.....	193,412	176,759	1,063,734
WEST COAST SOUTH AMERICA:														
Chile	352,412	.....	66,059	124,404	256,748	442,316	196,849	81,512	256,421	.....	53,312	558,582	254,965	2,643,579
Colombia	9,761	.....	.....	680	255	18,464	12,788	760	6,484	11,810	.....	117,836	40,621	219,459
Ecuador	120,636	.....	341	2,600	83,091	29,136	18,087	473	9,112	24,295	20,008	147,678	107,807	563,266
Peru	273,587	.....	.....	25,540	113,295	73,806	55,938	34,430	96,002	17,993	215,985	149,335	113,864	1,169,775
South America (other)[1]	10,653	.....	.....	38,667	36,125	48,173	18,825	.....	12,880	338,194	16,400	21,726	94,435	636,078
Total South America	767,049	.....	66,400	191,891	489,514	611,897	302,486	117,175	380,899	392,292	305,705	995,157	611,692	5,232,157

OCEANIA														
Australia	17,095			1,689	8,693	1,992		930	37,016			24,393	9,420	101,228
British Oceania									207,137					207,137
French Oceania	23,754			51,307	1,966	4,826	5,730		326			576	12,309	100,794
New Zealand	187,839		1,988	2,033	4,227	10,862		14,719	57,590			53,584	38,358	371,200
Oceania (other)[1]	5,681			1,025	374	6,830	427		20,355			6,658	22,570	63,920
Total Oceania	234,369		1,988	56,054	15,260	24,510	6,157	15,649	322,424			85,211	82,657	846,279
ASIA														
China	60					1,892						2,000		3,952
Taiwan	26			2,948		1,071	30	38	139			91	297	4,640
Hong Kong	14			138		624	497		689			2,280	257	4,499
Indonesia														
Japan	9,076			5,916	870	122,381	505	1,356	14,984			13,610	16,209	184,907
Philippine Islands						22,286			482				471	23,239
Singapore					460			675				5	1,020	2,160
South Korea	437					4,215	1,992	7	682			1,109	239	8,681
Thailand														
U S S R														
Asia (other)[1]	2,773			1,721		1,567	167	790	1,434			2,330	27,797	44,579
Total	12,386			10,723	1,330	154,036	3,191	2,866	24,410			21,425	46,290	276,657
GRAND TOTAL	2,518,783	78,662	88,879	770,126	1,087,819	3,772,635	1,207,613	422,038	2,666,690	639,256	312,164	1,786,145	3,607,477	18,938,289
Percent of Atlantic-bound cargo	3.8	0.1	0.1	1.2	1.7	5.8	1.8	0.6	4.1	1.0	0.5	2.7	5.5	28.9

See footnotes at end of table.

Table 9.—Origin and Destination of Commercial Cargo Through the Panama Canal From Pacific to Atlantic During Fiscal Year 1988 Segregated by Countries in Principal Trade Routes—Continued

[Long tons]

	To Asia (Middle East)	To Africa								
	Asia (Middle East)	Algeria	Egypt	Morocco	South Africa	Tunisia	Africa (other)[1]	Total	Grand Total	Percent of total Atlantic-bound cargo
WEST COAST NORTH AMERICA:										
United States:										
Alaska	.....	.....	.....	5,360	.....	.....	.....	5,360	739,986	1.1
Hawaii	.....	.....	.....	.....	148	.....	.....	148	308,414	0.5
Mainland	76,123	25,837	2,056,800	90,996	77,217	99,244	151,818	2,501,912	9,274,488	14.2
Total United States	76,123	25,837	2,056,800	96,356	77,365	99,244	151,818	2,507,420	10,322,888	15.8
WEST COAST CANADA	242,032	158,258	208,268	1,924,442	78,161	679,978	31,002	3,080,109	12,299,749	18.8
WEST COAST CENTRAL AMERICA:										
Costa Rica	215	.....	.....	.....	.....	.....	447	447	116,152	0.2
El Salvador	28	.....	.....	.....	.....	.....	.....	.....	153,583	0.2
Guatemala	.....	.....	.....	.....	.....	.....	.....	.....	515,988	0.8
Honduras	.....	.....	.....	.....	.....	.....	4,825	4,825	69,025	0.1
Mexico	363	16,603	.....	.....	.....	68,741	22,279	107,623	1,519,071	2.3
Nicaragua	.....	.....	.....	.....	.....	.....	.....	.....	177,234	0.3
Panama	2,498	.....	.....	.....	.....	.....	741	741	300,580	0.5
Central America (other)[2]	.....	.....	.....	.....	.....	.....	.....	.....	164,300	0.3
Balboa, R.P.[3]	.....	.....	.....	.....	.....	.....	.....	.....	12,398	0.0
Total Central America	3,104	16,603	.....	.....	.....	68,741	28,292	113,636	3,028,331	4.6
WEST COAST SOUTH AMERICA:										
Chile	9,670	.....	.....	.....	.....	.....	19,592	19,592	4,640,642	7.1
Colombia	4,815	5,051	.....	.....	.....	.....	.....	5,051	565,362	0.9
Ecuador	38,294	.....	.....	.....	.....	.....	.....	.....	7,280,481	11.1
Peru	12,179	51,304	.....	.....	.....	.....	163	51,467	3,872,243	5.9
South America (other)[4]	.....	.....	.....	.....	.....	.....	7,044	7,044	899,776	1.4
Total South America	64,958	56,355	.....	.....	.....	.....	26,799	83,154	17,258,504	26.3

OCEANIA:										
Australia									3,563,640	5.5
British Oceania									213,559	0.3
French Oceania									122,201	0.2
New Zealand		2,318						2,318	935,594	1.4
Oceania (other)[1]									278,785	0.4
Total Oceania		2,318						2,318	5,133,779	7.8
ASIA:										
China									1,673,083	2.6
Taiwan	2,276								1,561,371	2.4
Hong Kong	992						200	200	724,611	1.1
Indonesia									560,249	0.9
Japan	483				409		4,264	4,673	8,273,371	12.6
Philippine Islands									323,766	0.5
Singapore									685,214	1.0
South Korea	741						149	149	1,267,355	1.9
Thailand									152,018	0.2
U S S R									327,127	0.5
Asia (other)[1]	1,735						189	189	1,912,890	2.9
Total	6,227				409		4,802	5,211	17,461,055	26.7
GRAND TOTAL	392,444	259,371	2,265,068	2,020,798	155,935	847,963	242,713	5,791,848	65,504,306	-
Percent of Atlantic-bound cargo	0.6	0.4	3.5	3.1	0.2	1.3	0.4	8.8		100.0%

[1] Also includes cargo not routed to permit segregation between definite countries.
[2] Includes both local and transshipped cargo.

Statistics compiled by Office of Executive Planning.

Table 10.—Important Commodity Shipments Over Principal Trade Routes
Atlantic to Pacific

[Thousands of long tons]

	Fiscal year		
	1988	1987	1986
EAST COAST UNITED STATES TO WEST COAST UNITED STATES:			
Canned and refrigerated foods, miscellaneous	.....	.....	1
Chemicals and petroleum chemicals	429	308	238
Caustic soda	78	80	76
Chemicals, unclassified	176	111	76
Toluene	30	50	.....
Petroleum chemicals, miscellaneous	125	67	86
Grains	.....	51	.....
Corn	.....	51	.....
Lumber and products	2	.....	.....
Plywood, veneers, composition board	2	.....	.....
Machinery and equipment, miscellaneous	1	20	2
Manufactures of iron and steel	.....	9	9
Plates, sheets and coils	.....	6	.....
Wire, bars and rods	.....	3	9
Ores and metals	.....	.....	32
Ores	.....	.....	32
Alumina/bauxite	.....	.....	32
Other agricultural commodities	2	.....	.....
Coffee	2	.....	.....
Petroleum and products	566	278	947
Fuel oil, residual	37	28	81
Gasoline	254	86	479
Jet fuel	.....	.....	184
Liquefied gas	1	2	.....
Lubricating oil	271	162	169
Other and unclassified	3	.....	34
Miscellaneous	11	16	311
All other and unclassified	11	16	311
Total	1,011	682	1,540
EAST COAST UNITED STATES TO WEST COAST CANADA:			
Nitrates, phosphates, and potash	200	819	603
Phosphates	200	819	603
Miscellaneous	.....	13	25
All other and unclassified	.....	13	25
Total	200	832	628
EAST COAST UNITED STATES TO WEST COAST CENTRAL AMERICA:			
Canned and refrigerated foods, miscellaneous	3	.....	.....
Chemicals and petroleum chemicals	3	11	8
Caustic soda	2	.....	.....
Chemicals, unclassified	1	10	8
Petroleum chemicals, miscellaneous	.....	1	.....
Coal and coke (excluding petroleum coke)	174	.....	138
Coal	174	.....	138
Grains	946	1,177	476
Barley	9	.....	.....
Corn	460	443	80
Rice	14	9	.....

Table 10.—Important Commodity Shipments Over Principal Trade Routes Atlantic to Pacific—Continued

[Thousands of long tons]

	Fiscal year		
	1988	1987	1986
EAST COAST UNITED STATES TO WEST COAST CENTRAL AMERICA—Continued			
Nitrates, phosphates, and potash—Continued			
Sorghum	.....	103	.....
Soybeans	218	288	134
Wheat	245	331	238
Other and unclassified	.....	3	24
Lumber and products, miscellaneous	2	10	9
Machinery and equipment	2	1	.....
Construction machinery and equipment	2	.....	.....
Other and unclassified	.....	1	.....
Manufactures of iron and steel, miscellaneous	4	11	.....
Minerals, miscellaneous	.....	31	.....
Nitrates, phosphates, and potash	605	726	660
Ammonium compounds	95	146	148
Fertilizers, unclassified	83	103	107
Fishmeal	8	.....	.....
Phosphates	403	466	382
Potash	16	11	23
Ores and metals, miscellaneous	16	22	.....
Other agricultural commodities	33	42	34
Beans, edible	4	.....	.....
Cotton, raw	1	.....	.....
Oilseeds	28	42	34
Petroleum and products	197	152	113
Asphalt	.....	3	.....
Diesel oil	79	80	42
Fuel oil, residual	33	.....	2
Gasoline	77	49	29
Jet fuel	2	6	.....
Kerosene	3	6	.....
Liquefied gas	2	2	.....
Lubricating oil	.....	6	1
Other and unclassified	1	.....	39
Miscellaneous	71	51	98
Flour, wheat	.....	.....	2
Oil, vegetable	21	8	23
Paper and paper products	23	16	15
Tallow	12	18	39
All other and unclassified	15	9	19
Total	2,056	2,234	1,536
EAST COAST UNITED STATES TO WEST COAST SOUTH AMERICA:			
Canned and refrigerated foods, miscellaneous	28	21	33
Chemicals and petroleum chemicals	241	296	302
Caustic soda	54	113	108
Chemicals, unclassified	169	163	178
Benzene	3	.....	.....
Toulene	5	5	.....
Petroleum coke, miscellaneous	10	15	16
Coal and coke	59	174	108
Coal	59	171	108
Coke	.....	3	.....

Table 10.—Important Commodity Shipments Over Principal Trade Routes
Atlantic to Pacific—Continued

[Thousands of long tons]

	Fiscal year		
	1988	1987	1986
EAST COAST UNITED STATES TO WEST COAST SOUTH AMERICA—Continued			
Grains	2,245	1,668	1,656
Corn	719	473	257
Oats	5	4	5
Rice	13	29	2
Sorghum	136	.....	22
Soybeans	324	221	103
Wheat	1,043	941	1,262
Other and unclassified	5	.....	5
Lumber and products	34	7	7
Boards and planks	21	.....	.....
Plywood, veneers, composition board	1	1	.....
Pulpwood	7	5	7
Other and unclassified	5	1	.....
Machinery and equipment	62	60	59
Agricultural machinery and implements	18	17	16
Automobiles, trucks, accessories, and parts	17	16	18
Construction machinery and equipment	18	17	13
Electrical machinery and apparatus	5	5	8
Motorcycles, bicycles and parts	.....	1	.....
Other and unclassified	4	4	4
Manufactures of iron and steel	28	23	33
Angles, shapes, and sections	6	6	6
Nails, tacks and spikes	2	.....	.....
Plates, sheets, and coils	2	4	7
Tubes, pipes, and fittings	7	9	11
Wire, bars, and rods	1	2	4
Other and unclassified	10	2	5
Minerals, miscellaneous	34	19	17
Asbestos	2	.....	.....
Infusorial earth	1	.....	.....
Soda and sodium compounds	24	14	6
Sulfur	7	5	7
Other and unclassified	.....	.....	4
Nitrates, phosphates, and potash	700	738	482
Ammonium compounds	9	18	32
Fertilizers, unclassified	365	370	150
Nitrate of soda	2	.....	.....
Phosphates	292	275	281
Potash	32	75	19
Ores and metals	134	175	89
Ores	14	26	15
Other and unclassified	14	26	15
Metals	120	149	74
Aluminum	1	2	.....
Copper	.....	1	.....
Iron	16	.....	.....
Scrap	102	146	68
Tin, including tinplate	.....	.....	3
Other and unclassified	1	.....	3
Other agricultural commodities	16	79	90
Beans, edible	1	.....	.....
Copra and coconuts	.....	1	.....
Cotton, raw	3	2	.....
Oilseeds	1	2	1

Table 10.—Important Commodity Shipments Over Principal Trade Routes
Atlantic to Pacific—Continued

[Thousands of long tons]

	Fiscal year		
	1988	1987	1986
EAST COAST UNITED STATES TO WEST COAST SOUTH AMERICA—Continued			
Other agricultural commodities—Continued			
Peas, dry	1	.....	.....
Rubber, raw	2	1	.....
Sugar	8	73	83
Other and unclassified	.....	.....	6
Petroleum and products	643	108	134
Diesel oil	327	27	16
Fuel oil, residual	1	.....	14
Gasoline	46	4	8
Jet fuel	182	.....	23
Liquefied gas	11	13	5
Lubricating oil	76	61	57
Petroleum coke	.....	2	.....
Other and unclassified	.....	1	11
Miscellaneous	855	808	636
Bricks and tile	2	2	3
Carbon black	1	1	1
Clay, fire, and china	7	10	16
Fibers, plant	3	6	.....
Flour, wheat	53	56	27
Glass and glassware	2	2	.....
Groceries, miscellaneous	3	3	5
Marble and stone	7	.....	.....
Oil, coconut	3	4	3
Oil, vegetable	23	23	41
Paper and paper products	138	143	147
Resin	32	39	52
Rubber, manufactured	3	5	4
Tallow	56	42	40
Textiles	7	11	11
All other and unclassified	515	461	286
Total	5,079	4,176	3,646
EAST COAST UNITED STATES TO BALBOA, R.P.			
Canned and refrigerated foods, miscellaneous	3	2	6
Chemicals and petroleum chemicals	13	14	16
Grains	132	122	96
Corn	24	23	24
Rice	2	.....	.....
Soybeans	28	10	2
Wheat	78	89	70
Minerals, miscellaneous	.....	2	.....
Nitrates, phosphates and potash, miscellaneous	3	.....	.....
Ores and metals, miscellaneous	6	4	9
Petroleum and products	123	109	45
Diesel oil	69	23	.....
Fuel oil, residual	7	83	34
Gasoline	27	2	.....
Other and unclassified	20	1	11
Miscellaneous	33	63	77
Flour, wheat	6	.....	.....
Oil, coconut	1	.....	.....

Table 10.—Important Commodity Shipments Over Principal Trade Routes
Atlantic to Pacific—Continued

[Thousands of long tons]

	Fiscal year		
	1988	1987	1986
EAST COAST UNITED STATES TO BALBOA, R.P.—Continued			
Miscellaneous—Continued			
Oil, vegetable	1	.....	1
Tallow	1	2	.....
All other and unclassified	24	61	76
Total	313	316	249
EAST COAST UNITED STATES TO OCEANIA			
Canned and refrigerated foods, miscellaneous	19	13	.....
Chemicals and petroleum chemicals	690	576	523
Caustic soda	536	458	443
Chemicals, unclassified	147	107	79
Benzene	.....	1	.....
Toulene	4	5	.....
Petroleum coke, miscellaneous	3	5	1
Coal and coke	19	.....	51
Grains	122	34	41
Corn	10	.....	.....
Rice	.....	.....	1
Soybeans	112	34	40
Lumber and products	28	26	7
Pulpwood	28	26	7
Machinery and equipment	7	1	3
Agricultural machinery and equipment	2	.....	1
Automobiles, trucks, accessories and parts	2	1	.....
Construction machinery and equipment	1	.....	2
Electrical machinery and apparatus	1	.....	.....
Other and unclassified	1	.....	.....
Manufactures of iron and steel, miscellaneous	.....	.....	3
Minerals, miscellaneous	11	27	8
Salt	.....	7	.....
Soda and compounds	10	20	8
Sulfur	1	.....	.....
Nitrates, phosphates, and potash	552	579	403
Ammonium compounds	19	17	12
Fertilizers, unclassified	86	172	97
Phosphates	408	374	263
Potash	39	16	31
Ores anmd metals, miscellaneous	5	2	.....
Petroleum and products	207	313	263
Diesel oil	65	.....	39
Fuel oil, residual	.....	.....	3
Gasoline	1	121	58
Jet fuel	.....	11	10
Liquefied gas	59	63	71
Lubricating oil	32	28	15
Petroleum coke	48	85	64
Other and unclassified	2	5	3
Miscellaneous	571	498	470
Carbon black	33	.....	.....
Clay, fire and china	25	31	24
Oil, vegetable	1	2	1
Paper and products	38	13	22

Table 10.—Important Commodity Shipments Over Principal Trade Routes Atlantic to Pacific—Continued

[Thousands of long tons]

	Fiscal year		
	1988	1987	1986
EAST COAST UNITED STATES TO OCEANIA—Continued			
Miscellaneous—Continued			
Resin	1	1	1
All other and unclassified	473	451	422
Total	2,231	2,069	1,772
EAST COAST UNITED STATES TO ASIA			
Canned and refrigerated foods	368	262	166
Refrigerated foods	368	262	166
Fish	.....	1	.....
Fruit, excluding bananas	150	115	67
Other and unclassified	218	146	99
Chemicals and petroleum chemicals	3,445	2,846	1,973
Caustic soda	163	151	63
Chemicals, unclassified	1,979	1,860	1,404
Benzene	106	58	7
Toulene	122	133	1
Petroleum chemicals, miscellaneous	1,075	644	498
Coal and coke	4,812	5,669	7,000
Coal	4,732	5,610	7,000
Coke	80	59	.....
Grains	28,701	26,277	17,665
Barley	91	110	106
Corn	14,939	14,881	8,215
Oats	.....	1	.....
Rice	33	15	.....
Sorghum	2,025	2,521	2,223
Soybeans	6,143	7,098	6,413
Wheat	5,188	1,452	623
Other and unclassified	282	199	85
Lumber and products	1,117	510	400
Boards, and planks	20	.....	.....
Plywood, veneers, composition board	12	.....	.....
Pulpwood	705	510	400
Other and unclassified	380	.....	.....
Machinery and equipment	49	29	41
Agricultural machinery and equipment	3	2	3
Automobiles, trucks, accessories and parts	7	2	3
Construction machinery and equipment	8	4	19
Electrical machinery and apparatus	22	3	1
Other and unclassified	9	18	15
Manufactures of iron and steel	115	199	56
Angles, shapes, and sections	1	11	8
Plates, sheets, and coils	86	100	.....
Wires, bars, and rods	6	22	3
Other and unclassified	22	66	45
Minerals, miscellaneous	5	7	39
Nitrates, phosphates, and potash	5,256	4,521	3,384
Ammonium compounds	88	60	8
Fertilizers, unclassified	842	343	137
Phosphates	4,282	4,011	3,187
Potash	44	107	52
Ores and metals	1,870	2,028	2,942
Ores, miscellaneous	49	47	54

Table 10.—Important Commodity Shipments Over Principal Trade Routes Atlantic to Pacific—Continued

[Thousands of long tons]

	Fiscal year		
	1988	1987	1986
EAST COAST UNITED STATES TO ASIA—Continued			
Manufactures of iron and steel, miscellaneous—Continued			
Metals	1,821	1,981	2,888
Aluminum	5	.....	.....
Copper	13	6	.....
Iron	35	.....	.....
Scrap	1,762	1,971	2,877
Tin, including tinplate	.....	.....	1
Zinc	1	4	.....
Other and unclassified	5	.....	10
Other agricultural commodities	113	181	1
Beans, edible	38	28	.....
Cocoa and cacao beans	27	.....	.....
Molasses	8	.....	.....
Oilseeds	40	3	.....
Sugar	.....	150	.....
Other and unclassified	.....	.....	1
Petroleum and products	2,261	2,062	1,824
Diesel oil	108	.....	29
Fuel oil, residual	55	.....	82
Gasoline	274	414	120
Jet fuel	457	225	.....
Kerosene	30	26	60
Liquefied gas	179	192	324
Lubricating oil	97	114	81
Petroleum coke	1,051	1,061	1,106
Other and unclassified	10	30	22
Miscellaneous	6,716	5,895	4,929
Carbon black	.....	.....	17
Clay, fire and china	371	369	312
Fibers, plant	.....	1	.....
Flour, wheat	31	.....	13
Glass and glassware	3	.....	.....
Groceries, miscellaneous	11	22	1
Marble and stone	4	8	5
Oil, vegetable	55	71	63
Paper and paper products	240	355	166
Resin	32	40	78
Rubber, manufactured	1	1	5
Tallow	6	6	5
Textiles	.....	2	6
Tobacco and manufactures	.....	3	.....
Wax, paraffin	1	.....	.....
All other and unclassified	5,961	5,017	4,258
Total	54,828	50,486	40,420
EAST COAST CANADA TO WEST COAST UNITED STATES:			
Manufactures of iron and steel	11	45	.....
Ores and metals	.....	35	.....
Ores, miscellaneous	.....	30	.....
Metals, miscellaneous	.....	5	.....
Miscellaneous	6	6	35
Paper and products	.....	.....	16
All other and unclassified	6	6	19
Total	17	86	35

Table 10.—Important Commodity Shipments Over Principal Trade Routes
Atlantic to Pacific—Continued

[Thousands of long tons]

	Fiscal year		
	1988	1987	1986
EAST COAST CANADA TO WEST COAST CENTRAL AMERICA:			
Canned and refrigerated foods, miscellaneous	1	.....	.....
Grains, miscellaneous	4	22	30
Machinery and equipment, miscellaneous	1	.....	.....
Manufactures of iron and steel, miscellaneous	1	.....	7
Miscellaneous	10	11	37
Paper and paper products	3	7	13
All other and unclassified	7	4	24
Total	17	33	74
EAST COAST CANADA TO WEST COAST SOUTH AMERICA:			
Canned and refrigerated foods, miscellaneous	13	19	11
Grains	.....	11	.....
Wheat	.....	11	.....
Lumber and products	.....	4	1
Pulpwood	.....	4	1
Machinery and equipment, miscellaneous	.....	2	2
Manufactures of iron and steel, miscellaneous	.....	2	2
Minerals, miscellaneous	10	9	14
Asbestos	10	9	14
Nitrates, phosphates, and potash	37	16	.....
Potash	37	16	.....
Miscellaneous	31	37	38
Paper and paper products	24	19	17
Resin	.....	4	.....
All other and unclassified	7	14	21
Total	91	100	68
EAST COAST CANADA TO OCEANIA:			
Canned and refrigerated foods, miscellaneous	2	6	2
Lumber and products, miscellaneous	.....	1	23
Machinery and equipment, miscellaneous	2	1	.....
Minerals, miscellaneous	.....	21	6
Nitrates, phosphates and potash	18	15	.....
Potash	18	15	.....
Ores and metals, miscellaneous	3	27	4
Miscellaneous	139	127	68
Paper and paper products	20	35	23
All other and unclassified	119	92	45
Total	164	198	103
EAST COAST CANADA TO ASIA:			
Canned and refrigerated foods	64	40	75
Canned foods, miscellaneous	.....	.....	7
Refrigerated foods	64	40	68
Fish	47	22	32
Meat	11	.....	.....
Other and unclassified	6	18	36
Chemicals and petroleum chemicals, miscellaneous	.....	5	7
Grains	292	289	248
Soybeans	40	106	122

Table 10.—Important Commodity Shipments Over Principal Trade Routes
Atlantic to Pacific—Continued

[Thousands of long tons]

	Fiscal year		
	1988	1987	1986
EAST COAST CANADA TO ASIA—Continued			
Grains—Continued			
Wheat	252	174	101
Other and unclassified	.....	9	25
Lumber and products	274	240	204
Pulpwood	251	228	204
Other and unclassified	23	12	.....
Machinery and equipment, miscellaneous	10	5	6
Manufactures or iron and steel, miscellaneous	133	265	31
Nitrates, phosphates and potash, miscellaneous	40	16	.....
Ores and metals	222	318	451
Ores, miscellaneous	41	70	54
Metals	181	248	397
Aluminum	1	2	14
Copper	.....	6	2
Iron	.....	16	98
Scrap	176	222	241
Zinc	4	2	.....
Other and unclassified	.....	.....	42
Miscellaneous	428	493	528
Flour, wheat	33	83	51
Paper and paper products	154	127	86
Resin	7	34	23
All other and unclassified	234	249	368
Total	1,463	1,671	1,550
EAST COAST CENTRAL AMERICA TO WEST COAST CENTRAL AMERICA:			
Chemicals and petroleum chemicals, miscellaneous	16	3	.....
Nitrates, phosphates, and potash	297	398	414
Ammonium compounds	95	142	188
Phosphates	2	22	.....
Fertilizers, unclassified	200	234	226
Petroleum and products	2,039	2,655	3,042
Asphalt	8	8	8
Crude oil	565	624	561
Diesel oil	78	118	256
Liquefied gas	427	509	441
Fuel oil, residual	946	1,376	1,580
Gasoline	5	1	196
Jet fuel	10	.....	.....
Other and unclassified	.....	19	.....
Miscellaneous	4	22	10
All other and unclassified	4	22	10
Total	2,356	3,078	3,466
EAST COAST CENTRAL AMERICA TO WEST COAST SOUTH AMERICA:			
Nitrates, phosphates, and potash, miscellaneous	49	6	11
Ores and metals, miscellaneous	9	11	.....
Other agricultural commodities, miscellaneous	3	12	.....
Petroleum and products, miscellaneous	78	171	201
Miscellaneous	102	83	79
All other and unclassified	102	83	79
Total	241	283	291

Table 10.—Important Commodity Shipments Over Principal Trade Routes
Atlantic to Pacific—Continued

[Thousands of long tons]

	Fiscal year		
	1988	1987	1986
EAST COAST CENTRAL AMERICA TO BALBOA, R.P.:			
Petroleum and products	176	27	63
Diesel oil	33	11	10
Fuel oil, residual	143	16	53
Miscellaneous	1	1	1
All other and unclassified	1	1	1
Total	177	28	64
EAST COAST CENTRAL AMERICA TO ASIA:			
Chemicals and petroleum chemicals, miscellaneous	51	26	34
Manufactures of iron and steel, miscellaneous	84	282	.....
Nitrates, phosphates, and potash	1	.....	14
Fertilizers, unclassified	1	.....	14
Ores and metals, miscellaneous	20	46	68
Other agricultural commodities	142	1	26
Beans, edible	1	.....	.....
Coffee	1	1	1
Sugar	140	.....	25
Petroleum and products, miscellaneous	39	.....	.....
Miscellaneous	105	150	123
All other and unclassified	105	150	123
Total	442	505	265
EAST COAST SOUTH AMERICA TO WEST COAST UNITED STATES:			
Canned and refrigerated foods, miscellaneous	7	13	23
Chemicals and petroleum chemicals, miscellaneous	1	1	29
Lumber and products, miscellaneous	53	42	41
Manufactures of iron and steel, miscellaneous	555	479	405
Ores and metals	42	35	89
Ores	12	29	34
Alumina/bauxite	12	28	34
Other and unclassified	.....	1	.....
Metals, miscellaneous	30	6	55
Other agricultural commodities	9	2	.....
Cocoa and cacao beans	2	.....	.....
Coffee	7	2	.....
Petroleum and products	437	253	109
Asphalt	41	82	.....
Diesel oil	13	29	53
Gasoline	205	81	55
Jet fuel	165	61	.....
Liquefied gas	13	.....	.....
Petroleum products, miscellaneous	.....	.....	1
Miscellaneous	121	109	123
Paper and products	18	21	14
All other and unclassified	103	88	109
Total	1,225	934	819
EAST COAST SOUTH AMERICA TO WEST COAST CANADA:			
Manufactures of iron and steel, miscellaneous	50	51	50
Miscellaneous	37	60	28
All other and unclassified	37	60	28
Total	87	111	78

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Table 10.—Important Commodity Shipments Over Principal Trade Routes Atlantic to Pacific—Continued

[Thousands of long tons]

	Fiscal year		
	1988	1987	1986
EAST COAST SOUTH AMERICA TO WEST COAST CENTRAL AMERICA:			
Coal	.....	.....	54
Grains	.....	3	1
Soybeans	.....	.....	1
Other and unclassified	.....	3	.....
Manufactures of iron and steel, miscellaneous	101	75	30
Nitrates, phosphates, and potash	12	8	3
Fertilizers, unclassified	12	8	3
Ores and metals, miscellaneous	54	.....	.....
Petroleum and products	1,019	757	601
Crude oil	751	716	558
Diesel oil	29	32	.....
Fuel oil, residual	147	5	.....
Gasoline	60	3	.....
Other and unclassified	32	1	43
Other agricultural commodities	.....	.....	31
Sugar	.....	.....	31
Miscellaneous	18	21	61
All other and unclassified	18	21	61
Total	1,204	864	781
EAST COAST SOUTH AMERICA TO WEST COAST SOUTH AMERICA:			
Chemicals and petroleum chemicals, miscellaneous	10	26	16
Coal and coke	38	.....	.....
Grains, miscellaneous	10	1	2
Manufactures of iron and steel, miscellaneous	90	39	31
Minerals, miscellaneous	8	16	14
Nitrates, phosphates, and potash	158	137	176
Fertilizers, unclassified	158	137	176
Ores and metals	59	49	29
Ores	32	8	10
Alumina/bauxite	9	8	10
Iron	23	.....	.....
Metals, miscellaneous	27	41	19
Other agricultural commodities	53	40	11
Other and unclassified	53	40	11
Petroleum and products	1,550	2,563	1,696
Crude oil	915	1,602	1,115
Diesel oil	185	179	174
Fuel oil, residual	7	29	35
Gasoline	239	513	249
Jet fuel	28	28	23
Liquefied gas	134	96	24
Lubricating oil	37	48	37
Other and unclassified	5	68	39
Miscellaneous	131	87	96
All other and unclassified	131	87	96
Total	2,107	2,958	2,070
EAST COAST SOUTH AMERICA TO BALBOA, R.P.:			
Petroleum and products	8	77	61
Diesel oil	.....	24	35

Table 10.—Important Commodity Shipments Over Principal Trade Routes
Atlantic to Pacific—Continued

[Thousands of long tons]

	Fiscal year		
	1988	1987	1986
EAST COAST SOUTH AMERICA TO BALBOA, R.P.—Continued			
Petroleum and products—Continued			
Fuel oil, residual	.....	39	.....
Gasoline	.....	14	26
Lubricating oil	8	.....	.....
Miscellaneous	4	5	2
All other and unclassified	4	5	2
Total	12	82	63
EAST COAST SOUTH AMERICA TO HAWAII:			
Petroleum and products	19	90	92
Jet fuel	19	90	92
Total	19	90	92
EAST COAST SOUTH AMERICA TO OCEANIA:			
Petroleum and products, miscellaneous	.....	26	.....
Miscellaneous	3	4	4
All other and unclassified	3	4	4
Total	3	30	4
EAST COAST SOUTH AMERICA TO ASIA:			
Canned and refrigerated foods, miscellaneous	60	59	38
Chemicals and petroleum chemicals, miscellaneous	3	10	35
Coal and coke	260	59	177
Grains, miscellaneous	.....	.....	3
Lumber and products, miscellaneous	64	12	23
Manufactures of iron and steel, miscellaneous	126	420	361
Nitrates, phosphates, and potash	1	1	2
Fertilizers, unclassified	1	1	2
Ores and metals	474	382	269
Ores	124	79	93
Alumina/bauxite	11	10	12
Iron	54	56	32
Manganese	54	4	31
Other and unclassified	5	9	18
Metals	350	303	176
Aluminum	334	293	170
Other and unclassified	16	10	6
Other agricultural commodities	22	10	21
Cotton, raw	3	.....	4
Other and unclassified	19	10	17
Petroleum and products	118	382	163
Gasoline	.....	113	.....
Jet fuel	.....	87	85
Liquefied gas	118	150	78
Other and unclassified	.....	32	.....
Miscellaneous	142	88	37
All other and unclassified	142	88	37
Total	1,270	1,423	1,129

Table 10.—Important Commodity Shipments Over Principal Trade Routes
Atlantic to Pacific—Continued

[Thousands of long tons]

	Fiscal year		
	1988	1987	1986
WEST INDIES TO WEST COAST UNITED STATES:			
Chemicals and petroleum chemicals, miscellaneous	.....	.....	11
Manufactures of iron and steel, miscellaneous	.....	19	5
Minerals, miscellaneous	.....	.....	27
Salt	.....	.....	27
Nitrates, phosphates and potash, miscellaneous	.....	35	56
Ores and metals	.....	7	5
Ore, alumina bauxite	.....	7	5
Petroleum and products	133	254	227
Asphalt	.....	25	.....
Crude oil	47	.....	.....
Fuel oil, residual	.....	.....	36
Gasoline	55	105	139
Jet fuel	31	29	29
Lubricating oil	.....	46	23
Other and unclassified	.....	49	.....
Miscellaneous	9	93	6
All other and unclassified	9	93	6
Total	142	408	337
WEST INDIES TO WEST COAST CENTRAL AMERICA:			
Chemicals and petroleum chemicals, miscellaneous	.....	.....	5
Nitrates, phosphates and potash, miscellaneous	46	37	.....
Other agricultural commodities	15	.....	.....
Sugar	15	.....	.....
Petroleum and products	169	169	41
Asphalt	2	4	.....
Crude oil	65	35	.....
Diesel oil	42	71	28
Fuel oil, residual	2	34	.....
Gasoline	46	22	7
Jet fuel	3	2	.....
Kerosene	1	.....	.....
Liquefied gas	8	.....	.....
Lubricating oil	.....	1	1
Other and unclassified	.....	.....	5
Miscellaneous	44	53	73
Cement	2	8	2
All other and unclassified	42	45	71
Total	274	259	119
WEST INDIES TO WEST COAST SOUTH AMERICA:			
Nitrates, phosphates and potash, miscellaneous	73	53	12
Other agricultural commodities, miscellaneous	.....	24	25
Minerals, miscellaneous	.....	.....	2
Sulfur	.....	.....	2
Ores and metals	29	.....	9
Ores, miscellaneous	15	.....	9
Metals, miscellaneous	14	.....	.....
Petroleum and products	342	822	462
Crude oil	26	.....	.....
Diesel oil	178	356	267
Fuel oil, residual	6	51	33

Table 10.—Important Commodity Shipments Over Principal Trade Routes
Atlantic to Pacific—Continued

[Thousands of long tons]

	Fiscal year		
	1988	1987	1986
WEST INDIES TO WEST COAST SOUTH AMERICA—Continued			
Petroleum and products—Continued			
Gasoline	70	266	87
Jet fuel	32	104	45
Kerosene	.....	9	5
Lubricating oil	30	32	25
Other and unclassified	.....	4	.....
Miscellaneous	23	15	23
All other and unclassified	23	15	23
Total	467	914	533
WEST INDIES TO BALBOA, R.P.:			
Petroleum and products	26	77	6
Diesel oil	10	46	3
Fuel oil, residual	.....	5	.....
Gasoline	7	26	3
Lubricating oil	9	.....	.....
Miscellaneous	4	6	2
All other and unclassified	4	6	2
Total	30	83	8
WEST INDIES TO HAWAII:			
Petroleum and products	.....	87	.....
Jet fuel	.....	87	.....
Total	.....	87	.....
WEST INDIES TO OCEANIA:			
Minerals, miscellaneous	32	20	49
Salt	32	20	49
Petroleum and products	.....	3	20
Gasoline	.....	.....	20
Lubricating oil	.....	2	.....
Other and unclassified	.....	1	.....
Miscellaneous	5	5	8
All other and unclassified	5	5	8
Total	37	28	77
WEST INDIES TO ASIA:			
Canned and refrigerated foods	28	24	18
Fish, refrigerated	20	16	17
Other and unclassified	8	8	1
Chemicals and petroleum chemicals, miscellaneous	64	94	48
Manufactures of iron and steel, miscellaneous	97	29	.....
Nitrates, phosphates and potash, miscellaneous	65	.....	.....
Ores and metals	53	30	13
Ores	33	28	10
Alumina/bauxite	32	28	10
Other and unclassified	1	.....	.....
Metals, miscellaneous	20	2	3
Other agricultural commodities	1,814	953	1,117
Sugar	1,808	953	1,115

Table 10.—Important Commodity Shipments Over Principal Trade Routes
Atlantic to Pacific—Continued

[Thousands of long tons]

	Fiscal year		
	1988	1987	1986
WEST INDIES TO ASIA—Continued			
Other agricultural commodities—Continued			
Other and unclassified	6	.....	2
Petroleum and products	195	192	73
Diesel oil	75	.....	.....
Fuel oil, residual	41	.....	.....
Gasoline	38	94	24
Jet fuel	17	68	49
Lubricating oil	12	6	.....
Petroleum products, miscellaneous	12	24	.....
Miscellaneous	197	282	304
All other and unclassified	197	282	304
Total	2,513	1,604	1,573
EUROPE TO WEST COAST UNITED STATES:			
Canned and refrigerated foods, miscellaneous	76	78	57
Chemicals and petroleum chemicals	66	51	54
Caustic soda	7	16	5
Chemicals, unclassified	59	35	49
Lumber and products, miscellaneous	20	20	19
Machinery and equipment	180	224	233
Automobiles, trucks, accessories and parts	173	217	212
Construction machinery and equipment	3	1	11
Electrical machinery and apparatus	3	2	2
Other and unclassified	1	4	8
Manufactures of iron and steel	553	568	784
Angles, shapes, and sections	35	38	103
Plates, sheets, and coils	359	312	362
Tubes, pipes, and fittings	8	19	57
Wires, bars, and rods	105	77	93
Other and unclassified	46	122	169
Nitrates, phosphates, and potash	328	345	334
Ammonium compounds	51	119	117
Fertilizers, unclassified	220	194	192
Nitrate of soda	47	23	21
Other and unclassified	10	9	4
Ores and metals	26	123	27
Ores, miscellaneous	.....	115	2
Metals	26	8	25
Iron	19	.....	15
Other and unclassified	7	8	10
Petroleum and products	503	236	270
Diesel oil	14	19	.....
Fuel oil, residual	.....	52	.....
Gasoline	407	63	235
Jet fuel	57	66	.....
Kerosene	25	.....	.....
Other and unclassified	.....	36	35
Miscellaneous	1,711	1,799	1,617
Bricks and tile	7	4	15
Cement	115	227	137
Glass and glassware	1	1	1
Liquors and wines	4	8	19
Marble and stone	4	1	7
Paper and paper products	136	130	149

Table 10.—Important Commodity Shipments Over Principal Trade Routes
Atlantic to Pacific—Continued

[Thousands of long tons]

	Fiscal year		
	1988	1987	1986
EUROPE TO WEST COAST UNITED STATES—Continued			
Canned and refrigerated foods—Continued			
Rubber, manufactured	1	.....	2
All other and unclassified	1,443	1,428	1,287
Total	3,463	3,444	3,395
EUROPE TO WEST COAST CANADA:			
Canned and refrigerated foods, miscellaneous	8	12	8
Chemicals and petroleum chemicals, miscellaneous	3	.....	.....
Lumber and products, miscellaneous	5	.....	.....
Machinery and equipment	6	13	22
Automobiles, trucks, accessories and parts	6	13	20
Other and unclassified	.....	.....	2
Manufactures of iron and steel	250	135	135
Angles, shapes, and sections	23	5	10
Plates, sheets, and coils	118	40	44
Tubes, pipes, and fittings	17	6	16
Wire, bars, and rods	73	38	24
Other and unclassified	19	46	41
Ores and metals, miscellaneous	138	48	94
Miscellaneous	173	168	163
Bricks and tile	1	1	3
Liquors and wines	.....	.....	2
All other and unclassified	172	167	158
Total	583	376	422
EUROPE TO WEST COAST CENTRAL AMERICA:			
Canned and refrigerated foods, miscellaneous	23	32	26
Chemicals and petroleum chemicals, miscellaneous	18	54	48
Grains	112	73	97
Corn	2	1	6
Rice	18	9	24
Wheat	68	42	60
Other and unclassified	24	21	7
Machinery and equipment	45	48	44
Automobiles, trucks, accessories and parts	21	20	20
Construction machinery and equipment	11	19	.....
Other and unclassified	13	9	24
Manufactures of iron and steel	94	142	120
Angles, shapes, and sections	9	12	19
Plates, sheets, and coils	39	65	43
Tubes, pipes, and fittings	2	2	2
Wire, bars, and rods	38	58	44
Other and unclassified	6	5	12
Minerals, miscellaneous	3	.....	.....
Nitrates, phosphates, and potash	425	567	437
Ammonium compounds	51	95	45
Fertilizers, unclassified	341	470	378
Phosphates	1	.....	.....
Potash	32	2	14
Ores and metals, miscellaneous	7	11	15
Petroleum and products	599	607	638
Crude oil	451	416	492

Table 10.—Important Commodity Shipments Over Principal Trade Routes Atlantic to Pacific—Continued

[Thousands of long tons]

	Fiscal year		
	1988	1987	1986
EUROPE TO WEST COAST CENTRAL AMERICA—Continued			
Petroleum and products—Continued			
Diesel oil	77	87	.....
Gasoline	33	50	.....
Other and unclassified	38	54	146
Other agricultural commodities, miscellaneous	5	.....	1
Miscellaneous	156	155	159
Cement	2	1	1
Glass and glassware	3	1	3
Paper and paper products	29	18	19
All other and unclassified	122	135	136
Total	1,487	1,689	1,585
EUROPE TO WEST COAST SOUTH AMERICA:			
Canned and refrigerated foods	43	42	27
Canned foods	27	24	15
Milk	25	22	12
Other and unclassified	2	2	3
Refrigerated foods	16	18	12
Dairy products	3	6	1
Other and unclassified	13	12	11
Chemicals and petroleum chemicals	71	29	46
Caustic soda	45	9	12
Chemicals, unclassified	25	18	33
Petroleum chemicals, miscellaneous	1	2	1
Coal and coke	27	.....	.....
Grains	91	122	40
Barley	24	14	.....
Oats	.....	3	18
Wheat	35	65	5
Rice	4	7	.....
Other and unclassified	28	33	17
Lumber and products	.....	1	.....
Pulpwood	.....	1	.....
Machinery and equipment	60	61	57
Agricultural machinery and implements	7	14	10
Automobiles, trucks, accessories and parts	21	20	15
Construction machinery and equipment	14	12	20
Electrical machinery and apparatus	6	8	7
Other and unclassified	12	7	5
Manufactures of iron and steel	249	276	200
Angles, shapes, and sections	15	34	31
Plates, sheets, and coils	78	123	45
Tubes, pipes, and fittings	17	12	9
Wire, bars, and rods	128	82	78
Other and unclassified	11	25	37
Minerals, miscellaneous	16	24	23
Soda and sodium compounds	16	21	20
Other and unclassified	.....	3	3
Nitrates, phosphates, and potash	195	435	237
Ammonium compounds	51	77	28
Fertilizers, unclassified	108	287	197
Phosphates	23	30	9

Table 10.—Important Commodity Shipments Over Principal Trade Routes
Atlantic to Pacific—Continued

[Thousands of long tons]

	Fiscal year		
	1988	1987	1986
EUROPE TO WEST COAST SOUTH AMERICA—			
Continued			
Nitrates, phosphates, and potash—Continued			
Potash	8	41	2
Other and unclassified	5	.....	1
Ores and metals	92	50	119
Ores, miscellaneous	77	39	89
Metals	15	11	30
Iron	.....	.....	19
Tin, including tinplate	12	4	4
Other and unclassified	3	7	7
Other agricultural commodities	180	156	7
Sugar	176	148	3
Other and unclassified	4	8	4
Petroleum and products	109	127	182
Diesel oil	24	3	52
Gasoline	6	5	24
Liquefied gas	11	33	27
Lubricating oil	24	37	.....
Fuel oil, residual	44	13	43
Other and unclassified	.....	36	36
Miscellaneous	697	756	636
Ammunition and explosives	2	2	3
Bricks and tile	3	3	4
Cement	3	4	40
Flour, wheat	37	31	17
Glass and glassware	2	3	6
Groceries, miscellaneous	2	5	9
Liquors and wines	1	.....	1
Oil, vegetable	1	1	.....
Paper and paper products	42	51	32
Resin	2	3	2
Rubber, manufactured	1	2	2
Textiles	1	3	5
Wax, paraffin	4	5	2
All other and unclassified	596	643	513
Total	1,830	2,079	1,574
EUROPE TO OCEANIA:			
Canned and refrigerated foods, miscellaneous	12	15	11
Chemicals and petroleum chemicals	132	135	120
Caustic soda	51	56	34
Chemicals, unclassified	77	68	79
Petroleum chemicals, miscellaneous	4	11	7
Grains, miscellaneous	7	.....	.....
Lumber and products, miscellaneous	2	9	32
Machinery and equipment	26	32	27
Agricultural machinery and implements	3	3	2
Automobiles, trucks, accessories and parts	14	22	15
Construction machinery and equipment	3	4	8
Electrical machinery and apparatus	4	3	2
Other and unclassified	2	.....	.....
Manufactures of iron and steel	52	41	30
Angles, shapes, and sections	13	10	3
Plates, sheets, and coils	17	15	7

Table 10.—Important Commodity Shipments Over Principal Trade Routes Atlantic to Pacific—Continued

[Thousands of long tons]

	Fiscal year		
	1988	1987	1986
EUROPE TO OCEANIA—Continued			
Manufactures of iron and steel—Continued			
Tubes, pipes, and fittings	6	5	7
Wire, bars, and rods	9	9	8
Other and unclassified	7	2	5
Minerals, miscellaneous	11	6	7
Salt	9	4	5
Soda and sodium compounds	2	2	2
Nitrates, phosphates, and potash	59	57	38
Ammonium compounds	12	35	19
Fertilizers, unclassified	43	8	6
Phosphates	.....	.....	1
Potash	4	14	12
Ores and metals, miscellaneous	3	2	16
Other agricultural commodities, miscellaneous	3	3	4
Petroleum and products	7	86	36
Lubricating oil	4	11	9
Gasoline	1	71	1
Other and unclassified	2	4	26
Miscellaneous	713	634	464
Bricks and tile	1	3	1
Cement	14	10	14
Flour, wheat	12	14	11
Glass and glassware	1	4	2
Groceries, miscellaneous	.....	1	1
Liquors and wines	.....	1	1
Oil, vegetable	13	11	14
Paper and paper products	16	12	19
Rubber, manufactured	.....	.....	1
Textiles	.....	1	.....
All other and unclassified	656	577	400
Total	1,027	1,020	785
EUROPE TO ASIA:			
Canned and refrigerated foods	41	17	15
Refrigerated foods, miscellaneous	41	17	15
Chemicals and petroleum chemicals	218	301	177
Caustic soda	13	4	7
Chemicals, unclassified	147	261	139
Benzene	12	11	1
Petroleum chemicals, miscellaneous	46	25	30
Lumber and products, miscellaneous	50	8	.....
Machinery and equipment	41	14	30
Automobiles, trucks, accessories and parts	41	13	22
Other and unclassified	.....	1	8
Manufactures of iron and steel, miscellaneous	62	29	.....
Nitrates, phosphates, and potash	.....	25	2
Potash	.....	25	2
Ores and metals, miscellaneous	72	32	.....
Petroleum and products, miscellaneous	29	12	34
Miscellaneous	135	98	29
Paper and paper products	10	5	.....
All other and unclassified	125	93	29
Total	648	536	287

Table 10.—Important Commodity Shipments Over Principal Trade Routes
Atlantic to Pacific—Continued

[Thousands of long tons]

	Fiscal year		
	1988	1987	1986
AFRICA TO WEST COAST UNITED STATES:			
Canned and refrigerated foods, miscellaneous	.....	.....	2
Manufactures of iron and steel, miscellaneous	.....	146	155
Ores and metals	10	18	34
Metals	.....	3	10
Other and unclassified	.....	3	10
Ores	10	15	24
Manganese ore	6	6	5
Other and unclassified	4	9	19
Petroleum and products	27	31	207
Crude oil	.....	.....	207
Gasoline	27	4	.....
Jet fuel	.....	27	.....
Miscellaneous	14	11	14
All other and unclassified	14	11	14
Total	51	206	412
AFRICA TO WEST COAST CANADA:			
Manufactures of iron and steel, miscellaneous	.....	.....	1
Nitrates, phosphates, and potash	787	195	78
Phosphates	787	195	78
Miscellaneous	2	2	14
All other and unclassified	2	2	14
Total	789	197	93
AFRICA TO WEST COAST CENTRAL AMERICA:			
Grains	5	11	.....
Manufactures of iron and steel, miscellaneous	2	.....	.....
Nitrates, phosphates, and potash	204	49	.....
Phosphates	191	49	.....
Fertilizers, unclassified	13	.....	.....
Miscellaneous	1	.....	.....
All other and unclassified	1	.....	.....
Total	212	60	.....
AFRICA TO WEST COAST SOUTH AMERICA:			
Manufactures of iron and steel, miscellaneous	21	.....	11
Nitrates, phosphates, and potash	26	80	.....
Fertilizers, unclassified	26	70	.....
Phosphates	.....	10	.....
Petroleum and products, miscellaneous	8	5	50
Miscellaneous	5	7	7
All other and unclassified	5	7	7
Total	60	92	68
AFRICA TO OCEANIA:			
Chemicals and petroleum chemicals, miscellaneous	14	4	.....
Nitrates, phosphates, and potash	88	.....	.....
Phosphates	88	.....	.....
Miscellaneous	.....	1	.....
All other and unclassified	.....	1	.....
Total	102	5	.....

Table 10.—Important Commodity Shipments Over Principal Trade Routes
Atlantic to Pacific—Continued

[Thousands of long tons]

	Fiscal year		
	1988	1987	1986
AFRICA TO ASIA:			
Canned and refrigerated foods	38	34	40
Fish, refrigerated	38	34	39
Other and unclassified	.....	.....	1
Miscellaneous	29	16	.....
All other and unclassified	29	16	.....
Total	67	50	40
ASIA (MIDDLE EAST) TO WEST COAST UNITED STATES:			
Canned and refrigerated foods, miscellaneous	1	.....	.....
Petroleum and products	130	230	328
Gasoline	130	230	328
Miscellaneous	38	40	46
All other and unclassified	38	40	46
Total	169	270	374

Table 11.—Important Commodity Shipments Over Principal Trade Routes
Pacific to Atlantic

[Thousands of long tons]

	Fiscal year		
	1988	1987	1986
WEST COAST UNITED STATES TO EAST COAST UNITED STATES:			
Chemicals and petroleum chemicals	64	48	44
Chemicals, unclassified	64	48	40
Petroleum chemicals, miscellaneous	.....	.....	4
Lumber and products	.....	.....	1
Machinery and equipment	6	3	.....
Automobiles, trucks, accessories and parts	4	3	.....
Construction machinery and equipment	1	.....	.....
Other and unclassified	1	.....	.....
Petroleum and products	747	1,317	2,996
Crude oil	480	984	1,847
Diesel oil	102	40	259
Fuel oil, residual	36	103	539
Gasoline	.....	5	102
Lubricating oil	99	139	179
Other and unclassified	30	46	70
Miscellaneous	55	103	391
All other and unclassified	55	103	391
Total	872	1,471	3,432
WEST COAST UNITED STATES TO EAST COAST CANADA:			
Ores and metals, miscellaneous	10	.....	.....
Petroleum and products	178	101	273
Diesel oil	.....	.....	99
Fuel oil, residual	.....	.....	13
Jet fuel	38	.....	26
Lubricating oil	26	11	.....
Petroleum coke	114	90	135
Miscellaneous	3	1	2
All other and unclassified	3	1	2
Total	191	102	275
WEST COAST UNITED STATES TO EAST COAST SOUTH AMERICA:			
Canned and refrigerated foods	3	8	1
Canned foods	2	4	.....
Milk	2	4	.....
Refrigerated foods	1	4	1
Other and unclassified	1	4	1
Chemicals and petroleum chemicals, miscellaneous	.....	1	.....
Coke, coal type	.....	10	.....
Grains	.....	.....	28
Other and unclassified	.....	.....	28
Lumber and products	42	57	20
Pulpwood	42	57	20
Machinery and equipment	2	2	.....
Automobiles, trucks, accessories and parts	.....	2	.....
Agricultural machinery and implements	1	.....	.....
Construction machinery and equipment	1	.....	.....
Minerals, miscellaneous	13	40	65
Borax	1	.....	5

Table 11.—Important Commodity Shipments Over Principal Trade Routes
Pacific to Atlantic—Continued

[Thousands of long tons]

	Fiscal year		
	1988	1987	1986
WEST COAST UNITED STATES TO EAST COAST SOUTH AMERICA—Continued			
Minerals, miscellaneous—Continued			
Salt	.....	3	3
Soda and sodium compounds	.....	37	56
Sulfur	12	.....	.....
Infusorial earth	.....	.....	1
Nitrates, phosphates, and potash	2	5	16
Nitrate of soda	2	.....	15
Ammonium compounds	.....	.....	1
Fertilizers, unclassified	.....	5	.....
Ores and metals	1	2	.....
Metals, miscellaneous	1	2	.....
Other agricultural commodities	1	3	5
Beans, edible	.....	.....	3
Cotton	1	2	.....
Peas, dried	.....	1	2
Petroleum and products	108	58	99
Diesel oil	.....	.....	28
Petroleum coke	108	58	71
Miscellaneous	60	97	71
Clay, fire and china	5	6	.....
Tallow	.....	6	7
Paper and paper products	10	14	16
Seeds, excluding oilseeds	1	.....	.....
All other and unclassified	44	71	48
Total	232	283	305
WEST COAST UNITED STATES TO WEST INDIES:			
Canned and refrigerated foods, miscellaneous	3	1	.....
Grains	34	70	127
Rice	34	70	127
Petroleum and products	448	865	996
Diesel oil	64	51	181
Fuel oil, residual	384	782	792
Gasoline	.....	.....	20
Jet fuel	.....	32	3
Miscellaneous	5	3	.....
All other and unclassified	5	3	.....
Total	490	939	1,123
WEST COAST UNITED STATES TO EUROPE:			
Canned and refrigerated foods	208	145	128
Refrigerated foods	208	145	128
Fish	76	54	64
Fruit, excluding bananas	31	7	2
Other and unclassified	101	84	62
Chemicals and petroleum chemicals	61	83	62
Chemicals, unclassified	31	.....	.....
Petroleum chemicals, miscellaneous	30	.....	.....
Coal and coke	205	195	368
Grains	157	125	39
Barley	.....	26	.....

Table 11.—Important Commodity Shipments Over Principal Trade Routes
Pacific to Atlantic—Continued

[Thousands of long tons]

	Fiscal year		
	1988	1987	1986
WEST COAST UNITED STATES TO EUROPE— Continued			
Grains—Continued			
Rice	126	99	14
Wheat	31	.....	25
Lumber and products	732	781	376
Boards and planks	244	212	158
Plywood, veneers, composition board	87	92	49
Pulpwood	232	214	157
Other and unclassified	169	263	12
Machinery and equipment	1	.....	.....
Other and unclassified	1	.....	.....
Manufactures of iron and steel, miscellaneous	.....	.....	1
Minerals, miscellaneous	531	405	437
Borax	426	339	385
Salt	5	.....	.....
Soda and sodium compound	80	34	10
Sulfur	20	32	42
Nitrates, phosphates, and potash	88	44	13
Fishmeal	25	18	13
Fertilizers, miscellaneous	63	26	.....
Ores and metals	341	283	49
Ores	295	225	26
Copper	107	10	.....
Lead	92	76	5
Zinc	90	130	15
Other and unclassified	6	9	6
Metals	46	58	23
Copper	6	.....	.....
Lead	12	12	2
Scrap	.....	23	.....
Zinc	28	23	.....
Other and unclassified	.....	.....	21
Other agricultural commodities	55	4	4
Beans, edible	2	.....	1
Cotton, raw	11	4	3
Molasses	28	.....	.....
Peas, dry	14	.....	.....
Petroleum and products	2,087	2,306	2,672
Diesel oil	28	41	212
Fuel oil, residual	194	336	270
Gasoline	.....	.....	38
Lubricating oil	4	52	.....
Petroleum coke	1,831	1,817	2,100
Other and unclassified	30	60	52
Miscellaneous	1,065	1,018	817
Clay, fire and china	15	7	12
Groceries, miscellaneous	15	5	25
Oil, coconut	1	.....	.....
Oil, vegetable	16	14	8
Paper and paper products	18	54	45
Slag, clinkers and dross	2	.....	.....
All other and unclassified	998	938	727
Total	5,531	5,389	4,966

Table 11.—Important Commodity Shipments Over Principal Trade Routes
Pacific to Atlantic—Continued

[Thousands of long tons]

	Fiscal year		
	1988	1987	1986
WEST COAST UNITED STATES TO AFRICA—Continued			
Grains	2,184	806	178
Barley	125	.....	.....
Rice	30	32	11
Wheat	2,029	774	167
Lumber and products, miscellaneous	26	3	22
Minerals, miscellaneous	122	230	183
Infusorial earth	1	.....	.....
Salt	5	.....	.....
Sulfur	71	206	183
Soda and sodium compound	45	24	.....
Nitrates, phosphates, and potash	.....	13	12
Ores and metals	5	.....	.....
Ores	5	.....	.....
Lead	5	.....	.....
Other agricultural commodities	58	7	31
Cotton, raw	32	7	31
Sugar	26	.....	.....
Petroleum and products, miscellaneous	83	52	.....
Fuel oil, residual	83	52	.....
Miscellaneous	29	10	5
Flour, wheat	29	.....	.....
Textiles	.....	9	.....
All other and unclassified	.....	1	5
Total	2,507	1,121	431
WEST COAST CANADA TO EAST COAST UNITED STATES:			
Chemicals and petroleum chemicals, miscellaneous	453	200	149
Coke, coal type	.....	42	.....
Grains	.....	29	.....
Oats	.....	29	.....
Lumber and products	1,721	1,839	1,750
Boards and planks	1,688	1,839	1,717
Pulpwood	2	.....	.....
Other and unclassified	31	.....	33
Nitrates, phosphates, potash	21	34	20
Nitrate of soda	21	.....	.....
Potash	.....	.....	20
Fertilizers, miscellaneous	.....	34	.....
Petroleum and products	112	270	495
Crude oil	112	270	402
Diesel oil	.....	.....	27
Fuel oil, residual	.....	.....	6
Gasoline	.....	.....	11
Others and unclassified	.....	.....	49
Miscellaneous	2	4	7
Paper and products	1	.....	.....
All other and unclassified	1	4	7
Total	2,309	2,418	2,421

Table 11.—Important Commodity Shipments Over Principal Trade Routes
Pacific to Atlantic—Continued

[Thousands of long tons]

	Fiscal year		
	1988	1987	1986
WEST COAST CANADA TO EAST COAST SOUTH AMERICA:			
Canned and refrigerated foods, miscellaneous	1	.....	.....
Coal	52	.....	146
Grains	67	136	277
Barley	21	87	.....
Wheat	46	49	277
Lumber and products	59	66	55
Pulpwood	59	66	55
Minerals, miscellaneous	168	204	250
Sulfur	168	203	250
Other and unclassified	.....	1	.....
Nitrates, phosphates, and potash	13	1	110
Fertilizers, unclassified	.....	.....	23
Potash	13	.....	87
Other and unclassified	.....	1	.....
Ores and metals, miscellaneous	52	6	.....
Other agricultural commodities, miscellaneous	1	1	.....
Miscellaneous	70	39	57
Paper and paper products	61	34	45
All other and unclassified	9	5	12
Total	483	453	895
WEST COAST CANADA TO WEST INDIES:			
Chemicals and petroleum chemicals, miscellaneous	5	.....	20
Grains	25	.....	.....
Wheat	25	.....	.....
Lumber and products	83	43	36
Boards and planks	80	43	36
Plywood, veneers, composition board	3	.....	.....
Minerals, miscellaneous	36	33	111
Sulfur	36	33	111
Nitrates, phosphates, and potash, miscellaneous	8	28	8
Other agricultural acommodities, miscellaneous	10	.....	.....
Petroleum and products	.....	.....	21
Diesel oil	.....	.....	21
Miscellaneous	35	7	17
Paper and paper products	13	4	5
All other and unclassified	22	3	12
Total	202	111	213
WEST COAST CANADA TO EUROPE:			
Canned and refrigerated foods, miscellaneous	20	25	42
Refrigerated foods	20	25	42
Fish	3	2	.....
Other and unclassified	17	23	42
Chemicals and petroleum chemicals	33	17	92
Chemicals, unclassified	30	1	92
Petroleum chemicals, miscellaneous	3	16	.....
Coal	1,242	1,116	1,800
Grains	52	574	974
Barley	.....	308	385

Table 11.—Important Commodity Shipments Over Principal Trade Routes
Pacific to Atlantic—Continued

[Thousands of long tons]

	Fiscal year		
	1988	1987	1986
WEST COAST CANADA TO EUROPE—Continued			
Grains—Continued			
Wheat	.....	221	509
Other and unclassified	52	45	80
Lumber and products	3,421	2,904	2,530
Boards and planks	1,832	1,326	1,030
Plywood, veneers, composition board	105	130	155
Pulpwood	1,339	1,223	1,146
Other and unclassified	145	225	199
Minerals, miscellaneous	320	734	1,492
Asbestos	3	1	3
Borax	315	.....	8
Sulfur	2	733	1,481
Nitrates, phosphates, and potash	24	76	56
Potash	.....	69	14
Fishmeal	1	.....	4
Fertilizer, unclassified	23	7	38
Ores and metals	119	86	53
Ores	62	50	15
Copper	56	38	.....
Lead	2	5	12
Zinc	4	.....	.....
Other and unclassified	.....	7	3
Metals	57	36	38
Aluminum	4	1	2
Copper	27	.....	.....
Lead	17	11	15
Zinc	9	24	21
Other agricultural commodities	84	156	56
Beans, edible	2	1	.....
Oilseeds	50	149	47
Peas, dry	32	3	.....
Coffee	.....	3	.....
Other and unclassified	.....	.....	9
Petroleum and products	.....	80	92
Petroleum coke	.....	79	92
Other and unclassified	.....	1	.....
Miscellaneous	624	585	609
Marble and stone	6	.....	.....
Paper and paper products	269	241	252
Seeds, excluding oilseeds	3	30	50
Tallow	21	11	3
All other and unclassified	235	303	304
Total	5,939	6,353	7,796
WEST COAST CANADA TO AFRICA:			
Coal	86	.....	.....
Grains	117	292	379
Wheat	117	292	379
Lumber and products	161	36	1
Boards and planks	161	32	.....
Pulpwood	.....	.....	1
Other and unclassified	.....	4	.....
Minerals, miscellaneous	2,724	1,855	1,257

Table 11.—Important Commodity Shipments Over Principal Trade Routes
Pacific to Atlantic—Continued

[Thousands of long tons]

	Fiscal year		
	1988	1987	1986
WEST COAST CENTRAL AMERICA TO EAST COAST			
CENTRAL AMERICA—Continued			
Minerals, miscellaneous—Continued			
Soda and sodium compounds	.....	9	.....
Sulfur	2,714	1,846	1,257
Nitrates, phosphates, and potash	.....	10	18
Potash	.....	10	18
Miscellaneous	2	13	9
Paper and products	2	.....	.....
All other and unclassified	.....	13	9
Total	3,080	2,206	1,664
WEST COAST CANADA TO ASIA (MIDDLE EAST):			
Grains	.....	150	154
Barley	.....	135	129
Wheat	.....	15	25
Lumber and products, miscellaneous	16	46	.....
Minerals, miscellaneous	224	172	41
Sulfur	224	172	41
Miscellaneous	2	1	.....
All other and unclassified	2	1	.....
Total	242	369	195
WEST COAST CENTRAL AMERICA TO EAST COAST			
UNITED STATES:			
Canned and refrigerated foods	77	35	31
Refrigerated foods	77	35	31
Bananas	77	33	31
Other and unclassified	.....	2	.....
Chemicals and petroleum chemicals	9	12	23
Chemicals, unclassified	9	12	23
Manufactures of iron and steel	10	10	8
Tubes, pipes and fittings	10	10	8
Minerals, miscellaneous	451	421	313
Salt	451	421	313
Nitrates, phosphates, and potash	13	18	14
Fishmeal	13	18	14
Ores and metals	26	.....	.....
Ores	26	.....	.....
Other and unclassified	26	.....	.....
Other agricultural commodities	376	405	490
Coffee	8	7	11
Molasses	167	205	159
Sugar	201	193	320
Petroleum and products	40	5	29
Fuel oil, residual	.....	5	.....
Gasoline	40	.....	.....
Other and unclassified	.....	.....	29
Miscellaneous	16	1	4
All other and unclassified	16	1	4
Total	1,018	907	912

Table 11.—Important Commodity Shipments Over Principal Trade Routes
Pacific to Atlantic—Continued

[Thousands of long tons]

	Fiscal year		
	1988	1987	1986
WEST COAST CENTRAL AMERICA TO EAST COAST CENTRAL AMERICA			
Chemicals, miscellaneous	76	56	.....
Chemicals, unclassified	74	56	.....
Petroleum chemicals, miscellaneous	2	.....	.....
Grains	3	6	33
Other and unclassified	3	6	33
Nitrates, phosphates, and potash	231	253	351
Phosphates	231	242	338
Fertilizer, unclassified	.....	11	13
Petroleum and products	94	6	101
Diesel oil	50	2	30
Fuel oil, residual	4	.....	.....
Gasoline	39	3	70
Jet fuel	1	.....	.....
Kerosene	.....	1	1
Miscellaneous	6	3	13
Oil, vegetable	4	.....	.....
All other and unclassified	2	3	13
Total	410	324	498
WEST COAST CENTRAL AMERICA TO EAST COAST SOUTH AMERICA:			
Canned and refrigerated foods	27	22	33
Refrigerated foods	27	22	33
Fish	27	22	33
Chemicals and petroleum chemicals, miscellaneous	.....	6	.....
Grains	.....	.....	34
Corn	.....	.....	9
Sorghum	.....	.....	25
Minerals, miscellaneous	.....	129	65
Salt	.....	129	65
Ores and metals	13	11	10
Ores	12	.....	10
Copper	12	.....	10
Metals	1	11	.....
Aluminum	.....	1	.....
Copper	.....	10	.....
Scrap	1	.....	.....
Other agricultural commodities	18	1	.....
Sugar	18	.....	.....
Other and unclassified	.....	1	.....
Petroleum and products	34	.....	.....
Gasoline	34	.....	.....
Miscellaneous	4	1	9
All other and unclassified	4	1	9
Total	96	170	151
WEST COAST CENTRAL AMERICA TO WEST INDIES:			
Canned and refrigerated foods	128	149	132
Refrigerated foods	128	149	132
Dairy products	1	.....	.....

Table 11.—Important Commodity Shipments Over Principal Trade Routes Pacific to Atlantic—Continued

[Thousands of long tons]

	Fiscal year		
	1988	1987	1986
WEST COAST CENTRAL AMERICA TO WEST INDIES—Continued			
Canned and refrigerated foods—Continued			
Fish	126	149	.....
Other and unclassified	1	.....	132
Chemicals and petroleum chemicals, miscellaneous	.....	10	11
Lumber and products	27	23	17
Boards and planks	27	19	17
Other and unclassified	.....	4	.....
Nitrates, phosphates, and potash	3	2	.....
Fishmeal	3	2	.....
Other agricultural commodities	36	33	46
Molasses	6	7	.....
Sugar, raw	30	20	46
Other and unclassified	.....	6	.....
Petroleum and products, miscellaneous	21	13	.....
Diesel oil	6	.....	.....
Fuel oil, residual	12	13	.....
Gasoline	1	.....	.....
Liquefied gas	2	.....	.....
Miscellaneous	13	10	44
Rice	.....	.....	17
All other and unclassified	13	10	27
Total	228	240	250
WEST COAST CENTRAL AMERICA TO EUROPE:			
Canned and refrigerated foods	278	155	156
Canned foods, miscellaneous	.....	2	.....
Refrigerated foods	278	153	156
Bananas	210	82	99
Fish	60	67	.....
Fruit, excluding bananas	1	2	.....
Meat	1	.....	.....
Other and unclassified	6	2	57
Chemicals and petroleum chemicals	7	.....	.....
Chemicals, unclassified	7	.....	.....
Grains	25	.....	.....
Wheat	25	.....	.....
Lumber and products	12	12	10
Boards and planks	12	12	10
Manufactures of iron and steel	1	1	.....
Tubes, pipes and fittings	1	1	.....
Nitrates, phosphates, and potash	.....	1	5
Fishmeal	.....	1	5
Ores and metals	137	230	175
Ores	127	168	174
Copper	119	159	166
Zinc	8	9	.....
Other and unclassified	.....	.....	8
Metals	10	62	1
Copper	10	58	.....
Other and unclassified	.....	4	1
Other agricultural commodities	507	420	316
Cocoa and cacao beans	3	.....	.....
Coffee	90	95	90

Table 11.—Important Commodity Shipments Over Principal Trade Routes
Pacific to Atlantic—Continued

[Thousands of long tons]

	Fiscal year		
	1988	1987	1986
WEST COAST CENTRAL AMERICA TO EUROPE—Continued			
Other agricultural commodities—Continued			
Cotton, raw	25	24	22
Molasses	117	59	10
Oilseeds	.....	3	2
Peas, dried	30	31	21
Sugar	242	208	171
Petroleum and products	23	.....	.....
Gasoline	23	.....	.....
Miscellaneous	74	66	68
Clay, fire and china	.....	11	.....
Groceries, miscellaneous	1	.....	.....
oil, fish	8	3	.....
Oil, vegetable	3	.....	.....
Seeds, excluding oilseeds	1	1	7
Textiles	.....	.....	1
Tobacco and manufacture	.....	.....	1
All other and unclassified	61	51	59
Total	1,064	885	730
WEST COAST CENTRAL AMERICA TO AFRICA			
Canned and refrigerated foods	3	1	.....
Refrigerated foods	3	1	.....
Fish	3	1	.....
Grains	88	.....	.....
Wheat	88	.....	.....
Lumber and products	5	5	.....
Boards and planks	5	5	.....
Manufactures of iron and steel	17	.....	.....
Wires, bars and rods	17	.....	.....
Miscellaneous	1	3	97
All other and unclassified	1	3	97
Total	114	9	97
WEST COAST SOUTH AMERICA TO EAST COAST UNITED STATES:			
Canned and refrigerated foods	843	807	787
Canned foods, miscellaneous	27	10	14
Refrigerated foods	816	797	773
Bananas	399	416	470
Fish	37	37	25
Fruit, excluding bananas	340	315	264
Refrigerated, miscellaneous	40	29	14
Chemicals and petroleum chemicals	12	12	40
Chemicals, miscellaneous	12	11	17
Benzene	.....	.....	15
Toulene	.....	.....	4
Petroleum chemicals, miscellaneous	.....	1	4
Lumber and products	58	39	44
Boards and planks	26	11	21
Plywood, veneers, composition board	11	13	.....

Table 11.—Important Commodity Shipments Over Principal Trade Routes
Pacific to Atlantic—Continued

[Thousands of long tons]

	Fiscal year		
	1988	1987	1986
WEST COAST SOUTH AMERICA TO EAST COAST UNITED STATES—Continued			
Lumber and products—Continued			
Pulpwood	19	14	9
Other and unclassified	2	1	14
Machinery and equipment, miscellaneous	6	.....	.....
Manufactures of iron and steel, miscellaneous	49	62	10
Minerals, miscellaneous	346	559	332
Salt	326	556	331
Soda and sodium compounds	20	.....	.....
Other and unclassified	.....	3	1
Nitrates, phosphates, and potash	183	212	229
Fishmeal	33	96	109
Nitrate of soda	142	113	97
Potash	.....	3	.....
Fertilizers, miscellaneous	8	.....	23
Ores and metals	781	642	581
Ores	610	387	275
Copper	25	30	15
Iron	516	328	181
Lead	2	.....	2
Tin	3	9	4
Zinc	38	19	44
Other and unclassified	26	1	29
Metals	171	255	306
Copper	152	192	225
Iron	.....	20	19
Lead	1	.....	6
Zinc	17	23	46
Other and unclassified	1	20	10
Other agricultural commodities	257	331	501
Beans, edible	1	1	.....
Cocoa and cacao beans	35	30	30
Coffee	75	104	139
Cotton, raw	3	1	4
Molasses	27	60	109
Sugar	115	135	219
Wool, raw	1	.....	.....
Petroleum and products	4,047	4,367	5,874
Crude oil	1,636	2,330	4,294
Diesel oil	157	.....	28
Fuel oil, residual	2,230	1,942	1,481
Gasoline	24	94	25
Other and unclassified	.....	1	46
Miscellaneous	434	379	250
Fibers, plant	2	2	3
Groceries, miscellaneous	6	9	6
Liquors and wines	6	6	.....
Marble and stone	3	1	.....
Oil, vegetable	12	21	13
Paper and products	4	3	14
Seeds, excluding oilseeds	1	.....	.....
Slag, clinkers and dross	6	.....	.....
Textiles	8	8	10
All other and unclassified	386	330	204
Total	7,016	7,410	8,648

Table 11.—Important Commodity Shipments Over Principal Trade Routes
Pacific to Atlantic—Continued

[Thousands of long tons]

	Fiscal year		
	1988	1987	1986
WEST COAST SOUTH AMERICA TO EAST COAST CANADA:			
Nitrates, phosphates, and potash	11	8	4
Nitrate of soda	11	8	4
Ores and metals, miscellaneous	61	77	81
Petroleum and products	.....	47	.....
Fuel oil, residual	.....	47	.....
Miscellaneous	.....	5	5
All other and unclassified	.....	5	5
Total	72	137	90
WEST COAST SOUTH AMERICA TO EAST COAST CENTRAL AMERICA:			
Chemicals and petroleum chemicals	5	.....	.....
Chemicals, unclassified	5	.....	.....
Ores and metals	31	24	3
Ores, miscellaneous	31	19	3
Metals, miscellaneous	.....	5	.....
Other agricultural commodities	.....	29	27
Beans, edible	.....	29	27
Petroleum and products	322	565	763
Crude oil	322	565	760
Other and unclassified	.....	.....	3
Miscellaneous	23	6	8
Oil, vegetable	14	.....	.....
Paper and products	2	.....	.....
All other and unclassified	7	6	8
Total	381	624	801
WEST COAST SOUTH AMERICA TO EAST COAST SOUTH AMERICA:			
Canned and refrigerated foods	8	13	2
Canned foods, miscellaneous	1	6	.....
Refrigerated foods, miscellaneous	7	7	2
Chemicals and petroleum chemicals	11	16	9
Chemicals unclassified	11	16	9
Grains	26	9	.....
Rice	19	.....	.....
Soybeans	7	9	.....
Lumber and products	77	59	46
Boards and planks	17	16	.....
Plywood, veneers, composition board	1	.....	.....
Pulpwood	57	40	.....
Other and unclassified	2	3	46
Machinery and equipment, miscellaneous	1	1	.....
Manufactures of iron and steel, miscellaneous	.....	.....	1
Minerals, miscellaneous	15	7	40
Borax	2	.....	.....
Soda and sodium compounds	13	7	.....
Other and unclassified	.....	.....	40
Nitrates, phosphates, and potash	1	1	.....
Fishmeal	1	1	.....

Table 11.—Important Commodity Shipments Over Principal Trade Routes
Pacific to Atlantic—Continued

[Thousands of long tons]

	Fiscal year		
	1988	1987	1986
WEST COAST SOUTH AMERICA TO EAST COAST SOUTH AMERICA—Continued			
Ores and metals, miscellaneous	94	48	90
Other agricultural commodities	39	21	27
Beans, edible	31	10	24
Coffee	2	.....	.....
Peas, dry	1	.....	.....
Sugar	5	10	2
Other and unclassified	.....	1	1
Petroleum and products	107	77	543
Crude oil	96	66	512
Gasoline	11	11	31
Miscellaneous	70	71	74
Liquors and wines	1	1	.....
Oil, fish	.....	1	.....
Oil, vegetable	20	10	36
Paper and paper products	24	18	23
Textiles	3	1	.....
All other and unclassified	21	40	15
Total	449	323	832
WEST COAST SOUTH AMERICA TO WEST INDIES:			
Canned and refrigerated foods	58	37	31
Refrigerated foods	58	37	31
Dairy products	5	.....	.....
Fish	48	35	31
Fruit, excluding bananas	4	1	.....
Other and unclassified	1	1	.....
Grains	6	.....	.....
Soybeans	6	.....	.....
Lumber and products	66	102	60
Boards and planks	54	83	59
Plywood, veneers, composition board	12	6	.....
Pulpwood	.....	10	.....
Other and unclassified	.....	3	1
Manufactures of iron and steel	1	.....	.....
Tubes, pipes and fittings	1	.....	.....
Nitrates, phosphates, and potash	21	18	15
Fishmeal	21	18	15
Other agricultural commodities	59	36	.....
Beans, edible	13	1	.....
Molasses	46	25	.....
Sugar	.....	10	.....
Petroleum and products	3,705	1,887	3,098
Crude oil	3,283	1,224	1,960
Diesel oil	50	56	.....
Fuel oil, residual	372	605	1,138
Other and unclassified	.....	2	.....
Miscellaneous	13	15	16
Groceries, miscellaneous	2	1	.....
Paper and products	3	6	.....
All other and unclassified	8	8	16
Total	3,929	2,095	3,220

Table 11.—Important Commodity Shipments Over Principal Trade Routes
Pacific to Atlantic—Continued

[Thousands of long tons]

	Fiscal year		
WEST COAST SOUTH AMERICA TO EUROPE:	1988	1987	1986
Canned and refrigerated foods	1,221	1,091	941
Canned foods, miscellaneous	16	9	9
Refrigerated foods	1,205	1,082	932
Bananas	433	388	370
Fish	338	378	281
Fruit, excluding bananas	328	251	218
Meat	21	.....	.....
Other and unclassified	85	65	63
Chemicals and petroleum chemicals, miscellaneous	6	6	21
Coke, coal type	13	2	12
Grains, miscellaneous	1	12	18
Lumber and products	330	523	214
Boards and planks	149	110	39
Plywood veneers, composition board	19	4	.....
Pulpwood	93	145	167
Other and unclassified	69	264	8
Manufactures of iron and steel	.....	.....	10
Minerals, miscellaneous	.....	21	.....
Nitrates, phosphates, and potash	1,112	1,205	1,277
Fertilizers, unclassified	.....	.....	1
Fishmeal	958	1,073	1,159
Nitrate of soda	154	132	117
Ores and metals	1,722	1,610	1,768
Ores	1,064	959	955
Copper	358	218	296
Iron	107	136	3
Lead	70	81	101
Tin	5	6	26
Zinc	471	469	498
Other and unclassified	53	49	31
Metals	658	651	813
Aluminum	10	.....	.....
Copper	523	555	672
Iron	4	.....	.....
Lead	18	18	43
Tin, including tinplate	1	.....	.....
Zinc	78	58	90
Other and unclassified	24	20	8
Other agricultural commodities	167	195	203
Beans, edible	8	4	.....
Cocoa and cacao beans	5	12	26
Coffee	105	138	133
Cotton, raw	5	9	15
Molasses	5	22	6
Oilseeds	13	8	9
Sugar	24	.....	.....
Wool, raw	2	2	6
Other and unclassified	.....	.....	8
Miscellaneous	660	607	622
Groceries, miscellaneous	12	12	7
Oil, fish	68	77	157
Paper and paper products	24	18	5
Slag, clinkers and dross	4	.....	.....
Textiles	1	5	9
All other and unclassified	551	495	444
Total	5,232	5,272	5,086

Table 11.—Important Commodity Shipments Over Principal Trade Routes
Pacific to Atlantic—Continued

[Thousands of long tons]

	Fiscal year		
	1988	1987	1986
HAWAII TO EAST COAST UNITED STATES:			
Other agricultural commodities	256	422	286
Sugar	256	422	286
Miscellaneous	.....	1	13
All other and unclassified	.....	1	13
Total	256	423	299
OCEANIA TO EAST COAST UNITED STATES:			
Canned and refrigerated foods	413	381	356
Refrigerated foods	413	381	356
Dairy products	.....	.....	1
Fruit, excluding bananas	27	28	19
Meat	78	51	29
Other and unclassified	308	302	307
Chemicals and petroleum chemicals, miscellaneous	180	140	60
Coal and coke	484	206	.....
Manufactures of iron and steel, miscellaneous	18	25	68
Minerals, miscellaneous	22	.....	.....
Sulfur	22	.....	.....
Nitrates, phosphates, and potash	20	60	47
Fertilizers, unclassified	20	60	47
Ores and metals	1,518	1,122	1,316
Ores	1,510	1,082	1,254
Alumina/bauxite	846	544	646
Chrome	6	2	.....
Iron	60	.....	.....
Lead	.....	.....	10
Manganese	85	87	92
Other and unclassified	513	449	506
Metals	8	40	62
Aluminum	.....	34	54
Lead	5	.....	.....
Zinc	.....	.....	3
Other and unclassified	3	6	5
Other agricultural commodities	167	292	329
Molasses	130	166	177
Sugar	34	126	150
Wool, raw	3	.....	2
Petroleum and products	247	270	277
Crude oil	38	.....	177
Fuel oil, residual	27	111	39
Liquefied gas	9	127	47
Lubricating oil	56	32	14
Petroleum coke	117	.....	.....
Miscellaneous	327	342	267
Groceries, miscellaneous	3	.....	.....
Liquors and wines	1	.....	.....
Oil, coconut	6	6	.....
All Other and unclassified	317	336	267
Total	3,396	2,838	2,720
OCEANIA TO EAST COAST CANADA:			
Canned and refrigerated foods	68	71	61
Refrigerated foods	68	71	61

Table 11.—Important Commodity Shipments Over Principal Trade Routes
Pacific to Atlantic—Continued

[Thousands of long tons]

	Fiscal year		
	1988	1987	1986
OCEANIA TO EAST COAST CANADA—Continued			
Canned and refrigerated foods—Continued			
Meat	1	1	.....
Other and unclassified	67	70	61
Ores and metals	21	22	48
Ores	21	22	48
Alumina/bauxite	14	13	.....
Chrome	4	.....	.....
Other and unclassified	3	9	48
Other agricultural commodities	285	397	266
Sugar	285	397	266
Miscellaneous	70	65	42
Groceries, miscellaneous	1	.....	.....
All other and unclassified	69	65	42
Total	444	555	417
OCEANIA TO EAST COAST CENTRAL AMERICA:			
Canned and refrigerated foods, miscellaneous	33	13	18
Ores and metals	86	81	120
Manganese ore	84	64	87
Ores, miscellaneous	2	17	33
Other agricultural commodities	16	23	.....
Oilseeds	16	23	.....
Petroleum and products	8	.....	.....
Lubricating oil	8	.....	.....
Miscellaneous	1	.....	1
All other and unclassified	1	.....	1
Total	144	117	139
OCEANIA TO EAST COAST SOUTH AMERICA:			
Canned and refrigerated foods	33	26	.....
Canned foods, miscellaneous	30	16	.....
Refrigerated foods, miscellaneous	3	10	.....
Grains, miscellaneous	.....	14	.....
Ores and metals	177	.....	.....
Ores, miscellaneous	177	.....	.....
Miscellaneous	9	7	.....
All other and unclassified	9	7	.....
Total	219	47	.....
OCEANIA TO WEST INDIES:			
Canned and refrigerated foods	53	53	73
Canned foods, miscellaneous	8	8	16
Refrigerated foods	45	45	57
Dairy products	7	8	12
Fish	20	20	27
Other and unclassified	18	17	18
Petroleum and products	22	.....	.....
Gasoline	22	.....	.....
Miscellaneous	8	19	18
All other and unclassified	8	19	18
Total	83	72	91

Table 11.—Important Commodity Shipments Over Principal Trade Routes
Pacific to Atlantic—Continued

[Thousands of long tons]

	Fiscal year		
	1988	1987	1986
OCEANIA TO EUROPE:			
Canned and refrigerated foods	295	244	190
Canned foods, miscellaneous	.....	1	.....
Refrigerated foods	295	243	190
Dairy products	.....	9	.....
Fruit, excluding bananas	268	218	148
Meat	1	6	3
Other and unclassified	26	10	39
Chemicals and petroleum chemicals, miscellaneous	.....	90	113
Grains	30	11	.....
Barley	30	10	.....
Other and unclassified	.....	1	.....
Ores and metals	42	259	131
Ores	9	227	116
Copper	.....	174	93
Other and unclassified	9	53	23
Metals	33	32	15
Other and unclassified	33	32	15
Other agricultural commodities	218	161	186
Beans, edible	1	.....	.....
Copra	6	6	8
Molasses	.....	27	28
Oilseeds	.....	.....	1
Peas, dry	1	.....	.....
Sugar	207	127	147
Wool, raw	3	.....	2
Other and unclassified	.....	1	.....
Miscellaneous	259	264	266
Groceries, miscellaneous	5	4	.....
Liquors and wines	2	.....	.....
Oil, coconut	2	4	2
Oil, vegetable	2	3	.....
Rubber, manufactured	1	.....	.....
Seeds, excluding oilseeds	1	.....	.....
Tallow	.....	.....	23
All other and unclassified	246	253	241
Total	844	1,029	886
ASIA TO EAST COAST UNITED STATES:			
Canned and refrigerated foods	129	139	115
Canned foods	.....	10	19
Fruit	.....	10	19
Refrigerated foods	129	129	96
Fruit, refrigerated	.....	.....	12
Other and unclassified	129	129	84
Chemicals and petroleum chemicals	286	210	210
Chemicals, unclassified	220	145	143
Benzene	58	59	48
Toulene	4	.....	16
Petroleum chemicals, miscellaneous	4	6	3
Coke, coal type	997	380	229
Grains	6	.....	.....
Rice	6	.....	.....

Table 11.—Important Commodity Shipments Over Principal Trade Routes
Pacific to Atlantic—Continued

[Thousands of long tons]

	Fiscal year		
	1988	1987	1986
ASIA TO EAST COAST UNITED STATES—Continued			
Lumber and products	701	897	686
Boards and planks	73	67	81
Plywood, veneers, composition board	584	759	545
Other and unclassified	44	71	60
Machinery and equipment	1,901	2,157	2,021
Agricultural machinery	22	16	9
Automobiles, trucks, accessories and parts	1,725	1,943	1,840
Construction machinery and equipment	123	133	116
Electrical machinery and apparatus	2	12	8
Other and unclassified	29	53	48
Manufactures of iron and steel	3,820	3,255	3,650
Angles, shapes, and sections	285	278	213
Nails, tacks, and spikes	94	42	51
Plates, sheets, and coils	1,305	1,337	1,520
Tubes, pipes, and fittings	406	295	615
Wire, bars, and rods	185	188	258
Other and unclassified	1,545	1,205	993
Nitrates, phosphates, and potash	21	50	20
Fertilizers, unclassified	21	50	20
Ores and metals	1,336	771	839
Ores	1,293	757	780
Alumina/bauxite	278	155	164
Chrome	13	5	13
Iron	82	62	.....
Manganese	18	14	10
Other and unclassified	902	521	593
Metals	43	14	59
Aluminum	21	10	35
Copper	11	.....	.....
Iron	.....	.....	19
Tin, including tinplate	2	1	.....
Zinc	4	2	.....
Other and unclassified	5	1	5
Other agricultural commodities	254	200	310
Cocoa and cacao beans	1	.....	.....
Coffee	5	1	4
Copra	.....	2	.....
Oilseeds	3	.....	.....
Rubber, raw	107	43	66
Sugar	138	150	240
Other and unclassified	.....	4	.....
Petroleum and products	183	374	353
Crude petroleum	.....	92	52
Diesel oil	.....	.....	17
Fuel oil, residual	.....	104	.....
Gasoline	.....	53	174
Liquefied gas	4	15	18
Lubricating oil	22	19	75
Petroleum coke	146	59	11
Other and unclassified	11	32	6
Miscellaneous	5,118	5,408	5,777
Bricks and tile	2	2	1
Cement	.....	1	20
Clay, fire and china	.....	3	.....

Table 11.—Important Commodity Shipments Over Principal Trade Routes
Pacific to Atlantic—Continued

[Thousands of long tons]

	Fiscal year		
	1988	1987	1986
ASIA TO EAST COAST UNITED STATES—Continued			
Miscellaneous—Continued			
Flour, wheat	6	.....	.....
Glass and glassware	.....	1	.....
Groceries, miscellaneous	2	7	.....
Oil, coconut	29	18	26
Oil, vegetable	41	21	78
Porcelainware	6	1	.....
Rubber, manufactured	5	6	1
Textiles	.....	1	1
Wax, paraffin	64	5	.....
All other and unclassified	4,963	5,342	5,650
Total	14,752	13,841	14,210
ASIA TO EAST COAST CANADA:			
Canned and refrigerated foods, miscellaneous	3	7	4
Lumber and products	2	6	.....
Other and unclassified	2	6	.....
Machinery and equipment	9	14	10
Agricultural machinery	1	.....	.....
Automobiles, trucks, accessories and parts	6	.....	.....
Construction machinery and equipment	2	10	.....
Other and unclassified	.....	4	10
Manufactures of iron and steel	24	11	20
Angles, shapes, and sections	2	.....	.....
Nails, tacks and spikes	10	.....	.....
Plates, sheets, and coils	.....	7	1
Tubes, pipes, and fittings	1	.....	4
Wires, bars and rods	5	1	.....
Other and unclassified	6	3	15
Ores and metals	146	42	70
Ores	135	42	70
Alumina/bauxite	65	20	42
Chrome	2	14	.....
Copper	10	.....	.....
Manganese	9	8	.....
Other and unclassified	49	.....	28
Metals	11	.....	.....
Copper	11	.....	.....
Other agricultural commodities	.....	11	38
Cotton	.....	11	38
Miscellaneous	367	340	267
All other and unclassified	367	340	267
Total	551	431	409
ASIA TO EAST COAST SOUTH AMERICA:			
Canned and refrigerated foods	2	1	.....
Refrigerated foods	2	1	.....
Fish	1	.....	.....
Other and unclassified	1	1	.....
Chemicals and petroleum chemicals, miscellaneous	21	18	.....
Coke, coal type	42	61	19
Grains	17	.....	.....

Table 11.—Important Commodity Shipments Over Principal Trade Routes
Pacific to Atlantic—Continued

[Thousands of long tons]

	Fiscal year		
	1988	1987	1986
ASIA TO EAST COAST SOUTH AMERICA—Continued			
Grains—Continued			
Rice	17	.....	.....
Machinery and equipment	43	32	46
Agricultural machinery	1	1	.....
Automobiles, trucks, accessories and parts	22	16	19
Construction machinery and equipment	4	4	2
Electrical machinery and apparatus	8	7	8
Motorcycles, bicycles and parts	5	3	.....
Other and unclassified	3	1	17
Manufactures of iron and steel	64	79	130
Angles, shapes, and sections	1	3	.....
Plates, sheets, and coils	32	48	44
Tubes, pipes, and fittings	11	5	51
Wires, bars, and rods	15	19	18
Other and unclassified	5	4	17
Nitrates, phosphates, and potash	17	.....	22
Fertilizers, unclassified	17	.....	22
Ores and metals	33	21	66
Ores	26	14	65
Alumina/bauxite	2	.....	9
Other and unclassified	24	14	56
Metals	7	7	1
Aluminum	1	2	.....
Tin, including tinplate	2	3	1
Other and unclassified	4	2	.....
Other agricultural commodities	16	16	2
Cotton	9	4	.....
Oilseeds	.....	8	.....
Rubber, raw	7	4	2
Petroleum and products	22	.....	.....
Petroleum coke	22	.....	.....
Miscellaneous	127	180	160
Carbon black	1	.....	.....
Fibers, plant	1	.....	.....
Resin	2	1	1
Rubber, manufactured	1	5	8
Textiles	1	1	2
Wax, paraffin	1	.....	.....
All other and unclassified	120	173	149
Total	404	408	445
ASIA TO CRISTOBAL, R.P.:			
Machinery and equipment	2	8	6
Electrical machinery and apparatus	2	2	1
Other and unclassified	.....	6	5
Manufactures of iron and steel, miscellaneous	7	28	32
Miscellaneous	162	176	110
Textiles	1	1	.....
All other and unclassified	161	175	110
Total	171	212	148

Table 11.—Important Commodity Shipments Over Principal Trade Routes
Pacific to Atlantic—Continued

[Thousands of long tons]

	Fiscal year		
	1988	1987	1986
ASIA TO WEST INDIES:			
Canned and refrigerated foods	28	20	37
Canned foods, miscellaneous	12	10	21
Refrigerated foods	16	10	16
Fish	13	9	15
Meat	2	1	.....
Other and unclassified	1	.....	1
Chemicals and petroleum chemicals, miscellaneous	6	18	.....
Coal and coke	10	5	11
Grains	163	117	134
Corn	1	.....	.....
Rice	133	107	126
Soybeans	29	10	7
Grains, miscellaneous	.....	.....	1
Lumber and products	282	266	233
Boards and planks	267	240	204
Plywood, veneers, composition board	10	10	14
Pulpwood	5	6	15
Other and unclassified	.....	10	.....
Machinery and equipment	142	158	233
Agricultural machinery	3	1	.....
Automobiles, trucks, accessories and parts	131	147	206
Construction machinery and equipment	2	4	.....
Electrical machinery and apparatus	4	3	6
Motorcycles, bicycles and parts	2	3	.....
Other and unclassified	.....	.....	21
Manufactures of iron and steel	84	137	196
Angles, shapes and sections	7	15	5
Nails, tacks and spikes	2	4	.....
Plates, sheets, and coils	41	65	66
Tubes, pipes, and fittings	12	15	29
Wires, bars, and rods	11	24	66
Other and unclassified	11	14	30
Nitrates, phosphates and potash	13	6	35
Fertilizers, unclassified	11	6	26
Fishmeal	.....	.....	9
Phosphates	2	.....	.....
Ores and metals	8	10	22
Ores, miscellaneous	3	3	11
Metals, miscellaneous	5	7	11
Other agricultural commodities	28	6	.....
Beans, edible	26	4	.....
Cotton, raw	1	1	.....
Rubber, raw	1	1	.....
Petroleum and products	62	73	80
Diesel oil	3	9	1
Gasoline	59	63	72
Kerosene	.....	.....	7
Other and unclassified	.....	1	.....
Miscellaneous	446	488	478
Bricks and tile	1	2	1
Cement	1	1	.....
Fibers, plant	2	2	.....
Glass and glassware	5	3	4
Groceries, miscellaneous	5	2	1
Oil, vegetable	14	2	.....

Table 11.—Important Commodity Shipments Over Principal Trade Routes
Pacific to Atlantic—Continued

[Thousands of long tons]

	Fiscal year		
	1988	1987	1986
ASIA TO WEST INDIES—Continued			
Miscellaneous—Continued			
Paper and paper products	22	11	5
Porcelainware	1	2	1
Resin	.....	.....	1
Rubber, manufactured	6	3	6
Textiles	8	5	8
Wax, paraffin	2	1	.....
All other and unclassified	379	454	451
Total	1,272	1,304	1,459
ASIA TO EUROPE:			
Canned and refrigerated foods	5	8	5
Chemicals and petroleum chemicals, miscellaneous	39	36	19
Coke, coal type	55	.....	.....
Lumber and products	2	5	.....
Boards and planks	2	5	.....
Machinery and equipment	8	6	1
Automobiles, trucks, accessories and parts	7	3	.....
Construction machinery and equipment	1	2	.....
Other and unclassified	.....	1	1
Manufactures of iron and steel	9	.....	.....
Other and unclassified	9	.....	.....
Other agricultural commodities	.....	10	6
Cotton	.....	7	6
Oilseeds	.....	3	.....
Petroleum and products, miscellaneous	6	30	6
Miscellaneous	153	97	169
Oil, coconut	11	10	14
Oil, fish	64	44	39
Oil, vegetable	.....	13	1
Wax, paraffin	7	.....	.....
All other and unclassified	71	30	115
Total	277	192	206

Table 12.—Principal Canal Commodities by Direction—Fiscal Year 1988

[Long tons]

Commodity	Atlantic to Pacific	Pacific to Atlantic	Total
Ammonium compounds	520,835	23,090	543,925
Asbestos	17,115	3,769	20,884
Asphalt	51,593	357	51,950
Automobiles, trucks, and accessories	321,955	1,898,536	2,220,491
Bananas	16,258	1,162,545	1,178,803
Barley	123,681	203,033	326,714
Beans, edible	44,557	83,673	128,230
Benzene	128,843	72,604	201,447
Borax	1,395	431,273	432,668
Bricks and tile	16,938	4,463	21,401
Canned food products	88,333	122,340	210,673
Carbon black	38,546	980	39,526
Caustic soda	975,891	5,108	980,999
Cement	150,314	1,455	151,769
Chemicals, petroleum various	1,312,639	43,187	1,355,826
Chemicals, various	2,940,564	1,166,673	4,107,237
Clay, fire and china	472,349	24,961	497,310
Coal and coke (excluding petroleum coke)	5,390,189	3,185,659	8,575,848
Cocoa and cacao beans	31,822	45,623	77,445
Coffee	18,526	291,557	310,083
Coke, petroleum	1,098,250	2,338,012	3,436,262
Copra and coconuts	.....	6,224	6,224
Corn	16,164,975	1,526	16,166,501
Cotton, raw	24,807	86,535	111,342
Fertilizers, various	2,700,389	162,782	2,863,171
Fibers, plant	7,641	5,223	12,864
Fishmeal	11,495	1,080,372	1,091,867
Flour, wheat	185,469	35,635	221,104
Gasoline	2,009,286	251,615	2,260,901
Glass and glassware	17,299	5,940	23,239
Grains, various	332,210	52,382	384,592
Groceries, various	30,259	52,614	82,873
Infusorial earth	571	915	1,486
Jet fuel	1,006,546	38,543	1,045,089
Kerosene	59,344	434	59,778
Liquefied gas	1,092,452	14,493	1,106,945
Liquors	9,192	10,288	19,480
Lumber and products (excluding pulpwood)	541,636	6,013,027	6,554,663
Machinery, agricultural	45,804	27,819	73,623
Machinery, construction	73,062	138,973	212,035
Machinery, electrical	47,316	17,387	64,703
Machinery, various	42,828	42,304	85,132
Manufactures of iron and steel	2,736,466	4,106,586	6,843,052
Metal, aluminum	415,217	38,291	453,508
Metal, copper	13,699	773,309	787,008
Metal, iron	105,041	4,455	109,496
Metal, scrap	2,120,827	10,406	2,131,233
Metals, various (including tinplate)	71,436	310,873	382,309
Molasses	11,050	577,919	588,969
Nitrate of soda	51,727	328,161	379,888
Oats	5,833	517	6,350
Oil, coconut	4,202	50,236	54,438
Oil, crude	2,819,893	5,967,302	8,787,195
Oil, diesel	1,416,052	466,794	1,882,846
Oil, fish	2,165	140,154	142,319
Oil, lube	655,901	221,226	877,127
Oil, residual fuel	1,557,314	3,370,520	4,927,834
Oil, vegetable	154,907	125,216	280,123

Table 12.—Principal Canal Commodities by Direction—Fiscal Year 1988—Continued

[Long tons]

Commodity	Atlantic to Pacific	Pacific to Atlantic	Total
Oilseeds	71,659	111,195	182,854
Ore, alumina/bauxite	177,905	1,381,980	1,559,885
Ore, copper	38,982	857,245	896,227
Ore, iron	133,146	764,167	897,313
Ores, various	385,646	2,731,192	3,116,838
Paper and paper products	911,420	458,226	1,369,646
Peas, dry	645	88,779	89,424
Petroleum and products, various	84,650	70,555	155,205
Phosphates	6,725,045	233,200	6,958,245
Potash	279,807	20,317	300,124
Pulpwood	1,129,123	1,849,583	2,978,706
Refrigerated food products (excluding bananas)	741,139	2,736,509	3,477,648
Resin	104,667	3,320	107,987
Rice	97,507	364,874	462,381
Rubber, manufactured	15,843	13,322	29,165
Rubber, raw	4,219	116,179	120,398
Salt	41,408	800,129	841,537
Seeds, excluding oilseeds	738	20,964	21,702
Slag, clinkers, and dross	10,500	11,114	21,614
Soda and sodium compounds	74,877	157,945	232,822
Sorghum	2,163,188	.....	2,163,188
Soybeans	6,871,310	41,934	6,913,244
Sugar	2,212,779	1,580,518	3,793,297
Sulfur	8,600	3,583,086	3,591,686
Tallow	79,869	21,007	100,876
Textiles	15,237	21,863	37,100
Tobacco and manufactures	938	896	1,834
Toluene	164,081	4,003	168,084
Wax, paraffin	7,050	75,090	82,140
Wheat	6,997,053	2,445,186	9,442,239
Wool, raw	1,113	8,730	9,843
All other	11,123,287	9,285,304	20,408,591
Total	90,978,335	65,504,306	156,482,641

Other Statistics

Table 13.—Water Supply and Usage

	Fiscal year		Percent of usage fiscal year	
	1988	1987	1988	1987
	(Acre feet)			
MADDEN AND GATUN LAKE WATER SUPPLY:				
Total runoff, Madden Lake Basin	2,284,537	2,416,059		
Evaporation from Madden Lake	46,113	46,127		
Available for Madden Lake usage	2,238,424	2,369,932		
Municipal water use Madden Lake	110,246	111,089		
Available for downstream usage	2,128,178	2,258,843		
Total runoff, Gatun Lake (area below Madden)	2,024,701	2,388,222		
Subtotal	4,152,879	4,647,065		
Evaporation from Gatun Lake	450,018	437,239		
Available for Gatun watershed usage	3,702,861	4,209,826		
MADDEN LAKE WATER USAGE:				
Hydroelectric power	1,983,999	1,792,332	84	80
Leakage	14,519	14,479	1	1
Spillway discharge	255,234	305,992	11	14
Municipal	110,246	111,089	5	5
Total Madden Lake usage	2,363,998	2,223,892	100	100
GATUN LAKE WATER USAGE:				
Hydroelectric power	1,220,454	1,494,467	32	38
Lockages, Gatun and Pedro Miguel	2,019,537	2,013,223	53	51
Municipal and other usages	104,238	98,405	3	3
Spillway discharge	470,340	333,999	12	8
Total Gatun Lake usage	3,814,569	3,940,094	100	100

Table 14.—Dredging Operations—Fiscal Year 1988

(Cubic yards)

	Earth	Rock	Total
Pacific Entrance Channel	228,107	518,025	746,132
Gatun Lake Channels	11,950	48,250	60,200
Atlantic Entrance Channel	1,355,646	.....	1,355,646
Grand Total	1,595,703	566,275	2,161,978

Table 15.—Electrical Power Generated

(Gigawatt hours) [1]

	Fiscal year 1987	Fiscal year 1988
Generation:		
Gatun hydro station	96	77
Madden hydro station	200	206
Thermal generating stations	230	277
Gross generated by Panama Canal Commission	526	560
Less station service usage	(8)	(13)
Net total generated by Panama Canal Commission	518	547
Power Purchases:		
Through interconnect from Panama	2	5
Net Energy received for Wheeling	3	4
Power Sales:		
Through interconnect to Panama	(26)	(32)
Net power generated and purchases for Canal area only	496	524
Other power generated by military for own use	1	1
Total Canal area requirements	497	525
Power distributed to Comission's customers	467	494
Transmission and Distribution losses	29	30
Peak load (thousands of kilowatts)	84	84
Date of peak load	Sept.28	Dec. 28
Canal area load factor [2]	67%	67%

[1] One gigawatt hour equal to 1 million kilowatt hours.
[2] Total Canal area requirements divided by number of hours per year times peak load.

Table 16.—Fire Division Statistics

	Fiscal Year 1988		Fiscal Year 1987	
	Number of fires	Property loss	Number of fires	Property loss
PCC	95	$102,100	46	$70,658
Armed Forces	321	100,308	207	19,112
Private (including ships)	48	775,202*	46	279,351
R.P.**	185	5,140	225	4,982
Total	649	$982,750	524	$374,103
Value of Property involved in ship fires		$3,512,612		$20,742,589
Value of Property involved in other fires		137,121,989		49,798,902
Calls for Emergency Aid ***		4,615		5,090
Total number of calls (all types) responded to		6,497		5,748

* $300,000 of this amount represents the loss of vessel M/V MANABI that burned at Balboa Drydock No. 1, Balboa.
** Responses made to areas transferred to the Republic of Panama but responded to by Commission Forces, such as grass fires, burning railroad ties, etc.
*** Includes responses by both ambulance and fire apparatuses.